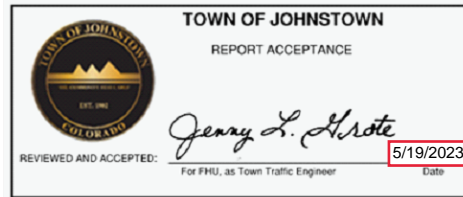


TRAFFIC IMPACT STUDY

For

High Plains Estates Weld County, Colorado



July 2022
Revised:
December 2022

Prepared for:

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22-051672

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APPENDIX C CAPACITY WORKSHEETS
APPENDIX D WARRANT ANALYSIS FORMS

I. Introduction

Project Overview

This traffic impact study is provided as a planning document and addresses the capacity, geometric, and control requirements associated with the development entitled High Plains Estates.

This traffic impact study has been revised to address jurisdiction review comments regarding additional description and detail of proposed site access connection to River Rock Drive.

This proposed development consists of a residential subdivision including a mix of single-family and multifamily housing. The development is located on the south side of E County Road 14 and east of High Plains Boulevard in Weld County, Colorado.

Study Area

The study area to be examined in this analysis encompasses High Plains Boulevard between E County Road 14 and State Highway 60, and E County Road 14 from I-25 Frontage Road to High Plains Boulevard, as well as proposed site access drives.

Figure 1 illustrates location of the site and study intersections.

Site Description

Land for the development is currently vacant and surrounded by a mix of residential, agricultural, and open space land uses. The proposed development is understood to entail the new construction of a residential subdivision supporting as many as 226 multifamily dwelling units, and 401 single-family detached dwelling units.

Proposed access to the development is primarily provided at the following locations: one full-movement access onto High Plains Boulevard (referred to as Access A), and one full-movement access onto E County Road 14 (referred to as Access B). Additional access to the development area also includes connection to Onyx Place via extension of River Rock Drive, as well as future connection to the east. However, for analysis purposes said access locations were not directly analyzed given their internal nature to the overall residential development area and the conceptual nature of the site plan. Internal access operations are expected to provide levels of service equal to or better than those of the adjacent major study intersections.

For purposes of this study, it is anticipated that development construction would be completed by end of Year 2024. General site and access locations are shown on Figure 1. A conceptual site plan, as prepared by Henry Design Group, is shown on Figure 2. This plan is provided for illustrative purposes only.



HIGH PLAINS ESTATES
Traffic Impact Study

Figure 1
SITE LOCATION

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NOTE:
 1. THIS IS AN ILLUSTRATIVE CONCEPTUAL PLAN TO SHOW HOW THE PROPERTY COULD DEVELOP, AS WELL AS INDICATE THE CURRENT OWNERS INTENT. ALL DETAILS SHOWN ARE CONCEPTUAL ONLY AND MORE DETAILED PLANS AND ENGINEERING ARE REQUIRED TO ENSURE COMPLIANCE WITH TOWN CODES, REGULATIONS AND STANDARDS.
 2. DIMENSIONS BETWEEN ACCESS POINTS ARE CONCEPTUAL. EXACT SPACING TO BE DETERMINED AT PLATTING.



HIGH PLAINS ESTATES
 Traffic Impact Study

Figure 2
CONCEPTUAL SITE PLAN

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December 2022
 Page 3



Existing and Committed Surface Transportation Network

Within the study area, High Plains Boulevard is the primary roadway that will accommodate traffic to and from the proposed development. The secondary roadways include E County Road 14, State Highway 60, Brunner Boulevard, I-25 Frontage Road, and River Rock Drive.

High Plains Boulevard is a north-south arterial roadway having between two to four through lanes (one to two lanes in each direction) with a combination of shared and exclusive turn lanes at the intersections within the study area. High Plains Boulevard provides a posted speed limit of 35 MPH. High Plains Boulevard currently ends north of Brunner Boulevard and is anticipated to be extended north to intersect E County Road 14 upon continued area development.

E County Road 14 is an east-west arterial roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersections within the study area. E County Road 14 provides a posted speed limit of 55 MPH. E County Road 14 becomes State Highway 60 west of I-25 Frontage Road.

State Highway 60 is an east-west state roadway having two through lanes (one lane in each direction) with exclusive turn lanes at the intersection within the study area. The Colorado Department of Transportation (CDOT) categorizes State Highway 60 as a Non-Rural Principal Highway (NR-A) and provides a posted speed limit of 55 MPH.

Brunner Boulevard is an east-west collector roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersection within the study area. Brunner Boulevard provides a posted speed limit of 25 MPH.

I-25 Frontage Road is a north-south state roadway having two through lanes (one lane in each direction) with shared turn lanes at the intersection within the study area. I-25 Frontage Road provides a posted speed limit of 55 MPH. I-25 Frontage Road is currently closed between E County Road 14 and State Highway 60 pursuant to CDOT's I-25 North Express Lanes Berthoud to Johnstown Project and is not anticipated to reopen in the future.

River Rock Drive is a north-south local roadway having two through lanes (one lane in each direction) with shared turn lanes at intersections within the existing adjacent subdivision. River Rock Drive does not provide a posted speed limit. However, based on the roadway classification, it is assumed to provide a posted speed limit of 25 MPH.

Study intersections operate under a stop-controlled condition. A stop-controlled intersection is defined as a roadway intersection where vehicle rights-of-way are controlled by one or more "STOP" signs.

No regional or specific improvements for the above-described roadways beyond that already discussed are known to be planned or committed at this time. It is anticipated that as area development continues to occur roadway and intersection improvements will be necessary dependent on specific capacity thresholds associated with each development area. For purposes of this analysis, the study area roadways are considered to be built to their ultimate cross-sections excluding future improvements associated with the proposed development and to accommodate regional transportation demands.

II. Existing Traffic Conditions

Morning (AM) and afternoon (PM) peak hour traffic counts were collected at the intersections of High Plains Boulevard with State Highway 60 and Brunner Boulevard, as well as E County Road 14 with I-25 Frontage Road. Average daily traffic (ADT) volumes were collected over a 24-hour period on High Plains Boulevard, State Highway 60, and E County Road 14. Counts were collected on June 1, 2022, with AM peak hour counts being collected during the period of 7:00 a.m. to 9:00 a.m. and PM peak hour counts being collected during the period of 4:00 p.m. to 6:00 p.m.

Existing volumes and intersection geometry are shown on Figure 3. Traffic count data is included for reference in Appendix A.



Not to Scale

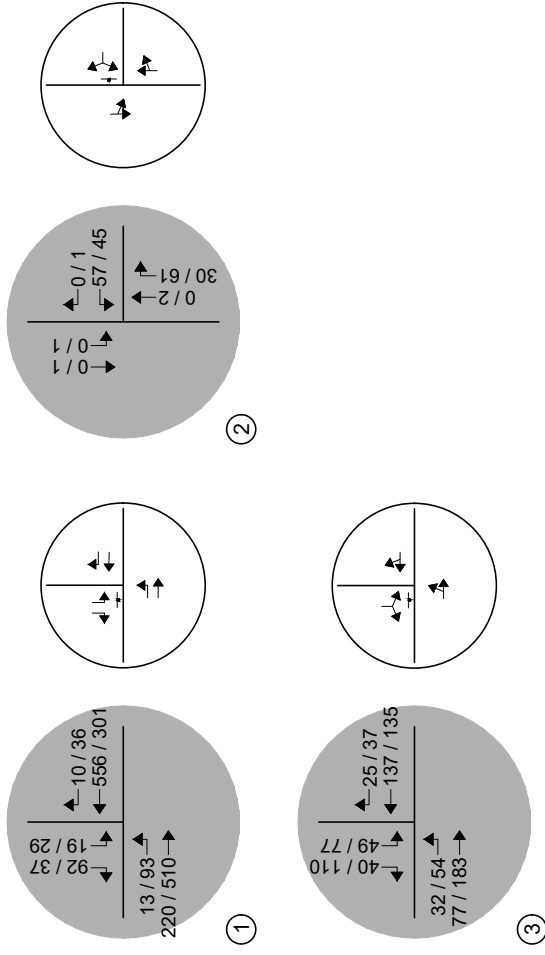
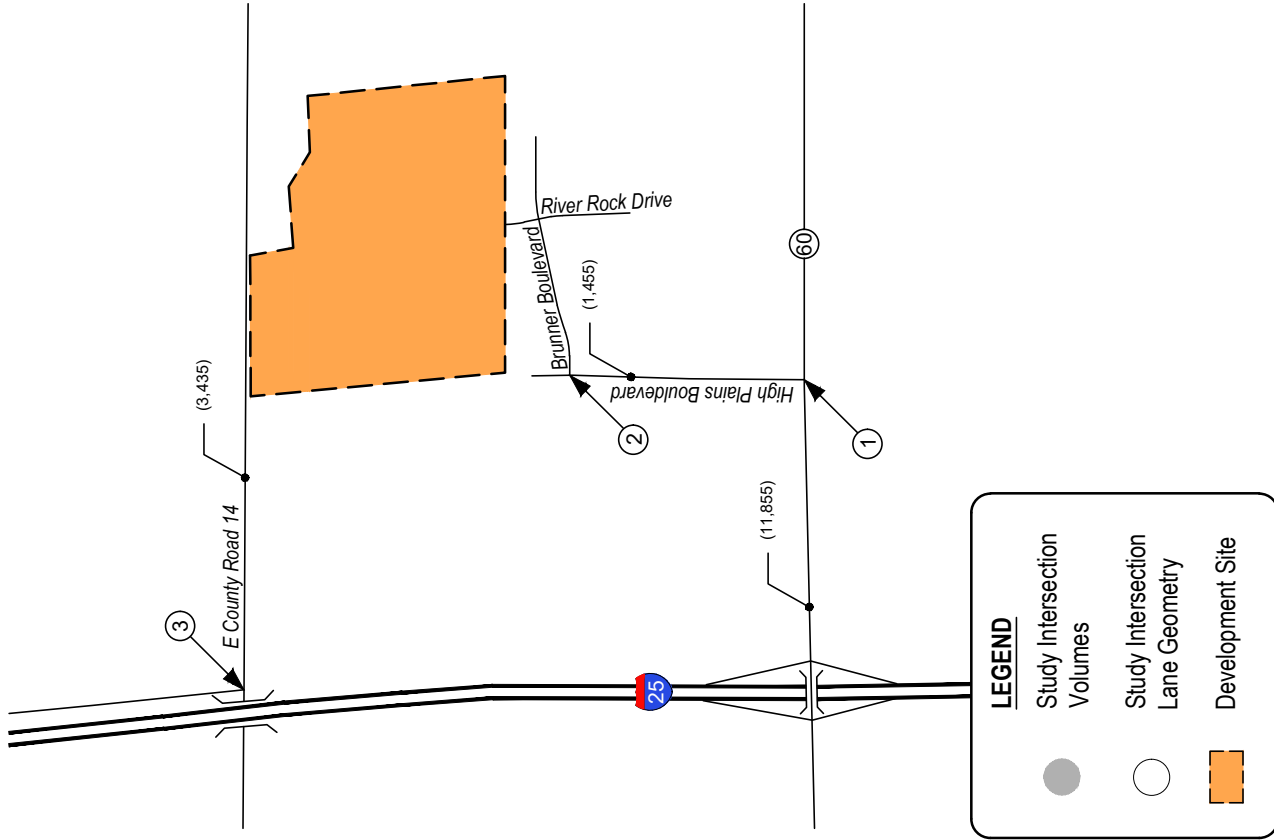


Figure 3
EXISTING TRAFFIC
 Volumes & Intersection Geometry
 AM / PM Peak Hour
 (ADT) : Average Daily Traffic

HIGH PLAINS ESTATES
 Traffic Impact Study



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Peak Hour Intersection Levels of Service – Existing Traffic

The Signalized and Unsignalized Intersection Analysis techniques, as published in the Highway Capacity Manual (HCM), 6th Edition, by the Transportation Research Board and as incorporated into the SYNCHRO computer program, were used to analyze the study intersections for existing and future traffic conditions. These nationally accepted techniques allow for the determination of intersection level of service (LOS) based on the congestion and delay of each traffic movement.

Level of service is a method of measurement used by transportation professionals to quantify a driver’s perception of travel conditions that include travel time, number of stops, and total amount of stopped delay experienced on a roadway network. The HCM categorizes level of service into a range from “A” which indicates little, if any, vehicle delay, to “F” which indicates a level of operation considered unacceptable to most drivers. These levels of service grades with brief descriptions of the operating condition, for unsignalized and signalized intersections, are included for reference in Appendix B and have been used throughout this study.

The level of service analyses results for existing conditions are summarized in Table 1.

Intersection capacity worksheets developed for this study are provided in Appendix C.

Table 1 – Intersection Capacity Analysis Summary – Existing Traffic

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
SH 60 / High Plains Boulevard (Stop-Controlled) Eastbound Left Southbound Left Southbound Right	A C B	A C B
High Plains Boulevard / Brunner Boulevard (Stop-Controlled) Westbound Left and Right Southbound Left and Through	A A	A A
E County Road 14 / I-25 Frontage Road (Stop-Controlled) Eastbound Left and Through Southbound Left and Right	A B	A B

Key: Stop-Controlled Intersection: Level of Service

Existing Traffic Analysis Results

Under existing conditions, operational analysis shows that the unsignalized intersection of State Highway 60 with High Plains Boulevard has turning movement operations at or better than LOS C during both the morning and afternoon peak traffic hours.

The unsignalized intersection of High Plains Boulevard with Brunner Boulevard has turning movement operations at LOS A during both the morning and afternoon peak traffic hours.

The unsignalized intersection of E County Road 14 with I-25 Frontage Road has turning movement operations at LOS B or better during both the morning and afternoon peak traffic hours.

III. Future Traffic Conditions Without Proposed Development

Background traffic is the traffic projected to be on area roadways without consideration of the proposed development. Background traffic includes traffic generated by development of vacant parcels in the area.

To account for projected increases in background traffic for Years 2024 and 2042, a compounded annual growth rate was determined using historical traffic data provided by CDOT's Online Transportation Information System (OTIS) along the adjacent segment of State Highway 60, which anticipates a 20-year growth rate of approximately two percent. Therefore, a growth rate of two percent was applied to existing traffic volumes. This annual growth rate provides for a conservative analysis and is assumed to account for regional growth projections and the level of in-fill development expected within the area.

To account for projected traffic from adjacent developments not yet built, trip generations from the Revere at Johnstown, Filing No. 1 traffic study¹ were added to background traffic volumes. It is noted that additional development to the west and north of the proposed development site is anticipated pursuant to conceptual land use plans referred to as Great Plains Village. However, given the conceptual nature of this area, no specific traffic analyses are currently available. Therefore, future traffic volumes associated with this additional development is assumed to be accounted for within the applied two percent annual growth rate.

Pursuant to the area roadway improvements discussed in Section I, Year 2024 background traffic conditions assume the extension of High Plains Boulevard north to E County Road 14 as part of the adjacent Revere development including site access along this extension located opposite proposed site Access A (referred to as Access Drive). Year 2042 assumes no additional roadway improvements to accommodate regional transportation demands. This assumption provides for a conservative analysis.

Background Traffic Signal Warrant

A signal warrant analysis, using Year 2024 and 2042 background traffic volumes, was conducted for the State Highway 60 intersection with High Plains Boulevard in order to review potential for traffic signal control. Year 2024 Analysis results conclude that the study intersection was found to be above the minimum vehicle volumes required to meet Warrant 3 – Peak Hour, from the Manual on Uniform Traffic Control Devices (MUTCD), for the installation of a traffic signal. It is noted however that warrants performed in the previous traffic study for adjacent development did not anticipate signalization by Year 2024. As such, the State Highway 60 and High Plains Boulevard intersection analysis remained a stop-controlled condition for Year 2024 but is assumed to be signalized by Year 2042. Warrant study worksheets are provided for reference in Appendix D.

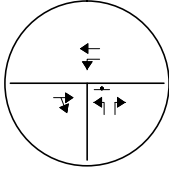
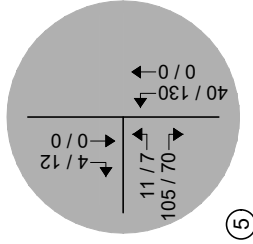
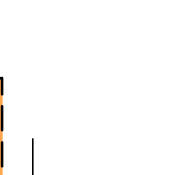
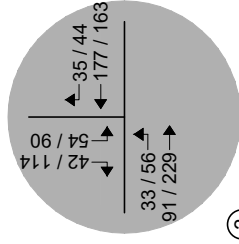
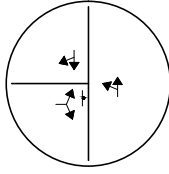
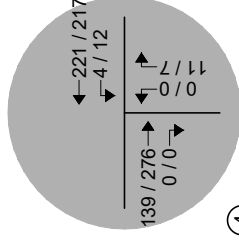
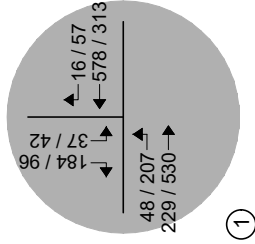
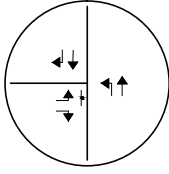
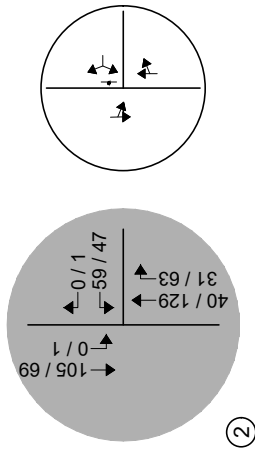
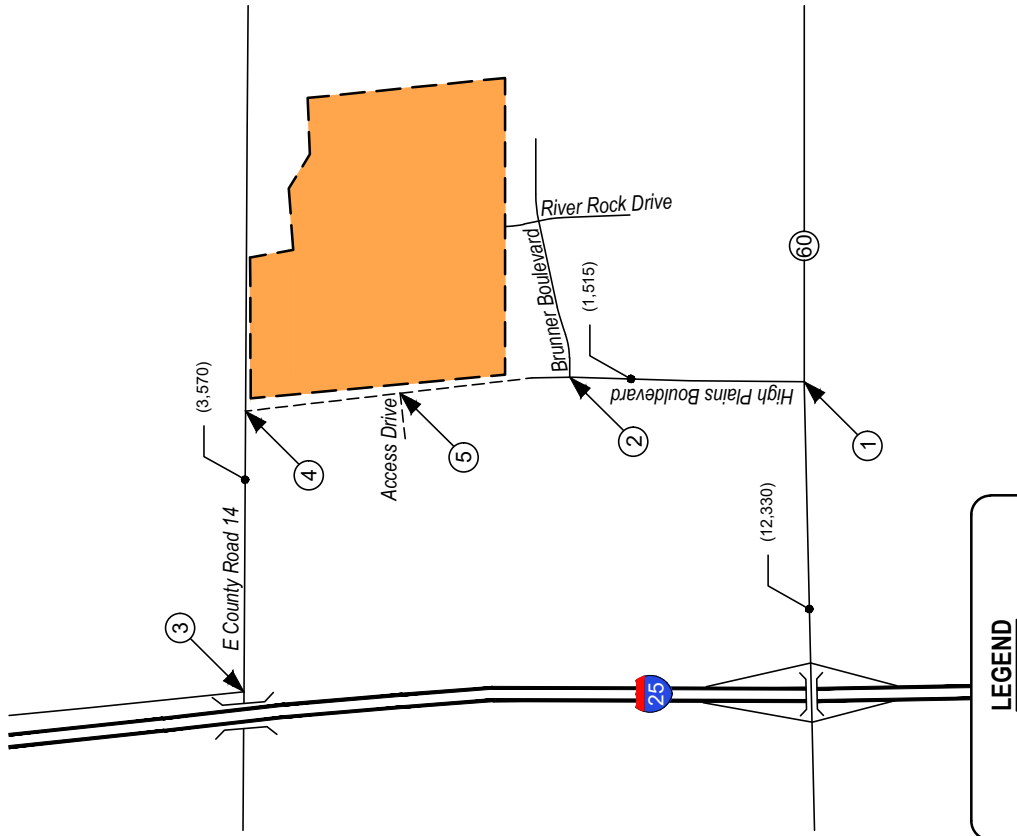
¹ Revere at Johnstown, Filing No. 1 Transportation Impact Study, Delich Associates, September 2020.

Warrant 3 is intended for use at locations where traffic conditions are such that for a minimum of one hour on an average day, the minor-street (High Plains Boulevard) traffic suffers undue delay when entering or crossing the major street (State Highway 60). This assumption provides for a conservative analysis. Said study intersection should be monitored further by CDOT and County Staff as area development occurs to determine when signalization installation is appropriate.

Projected background traffic volumes and intersection geometry for Years 2024 and 2042 are shown on Figure 4 and Figure 5, respectively.



Not to Scale



LEGEND






-  Study Intersection
-  Volumes
-  Study Intersection
-  Lane Geometry
-  Development Site

Figure 4
BACKGROUND TRAFFIC - YEAR 2024
 Volumes & Intersection Geometry
 AM / PM Peak Hour
 (ADT) : Average Daily Traffic

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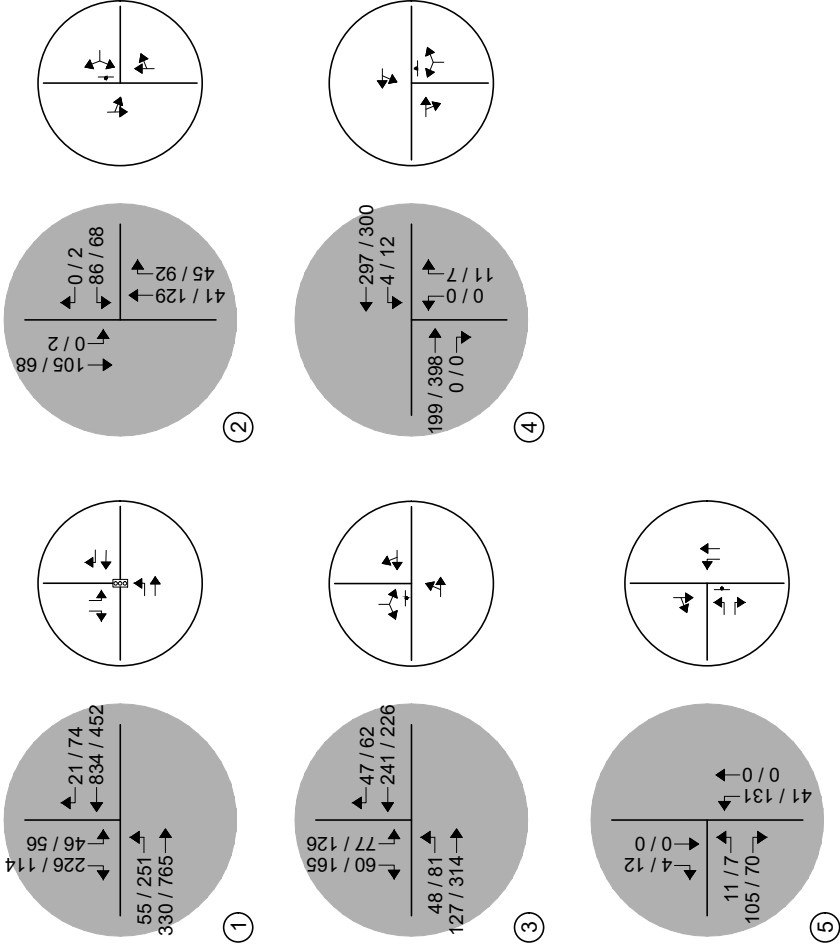
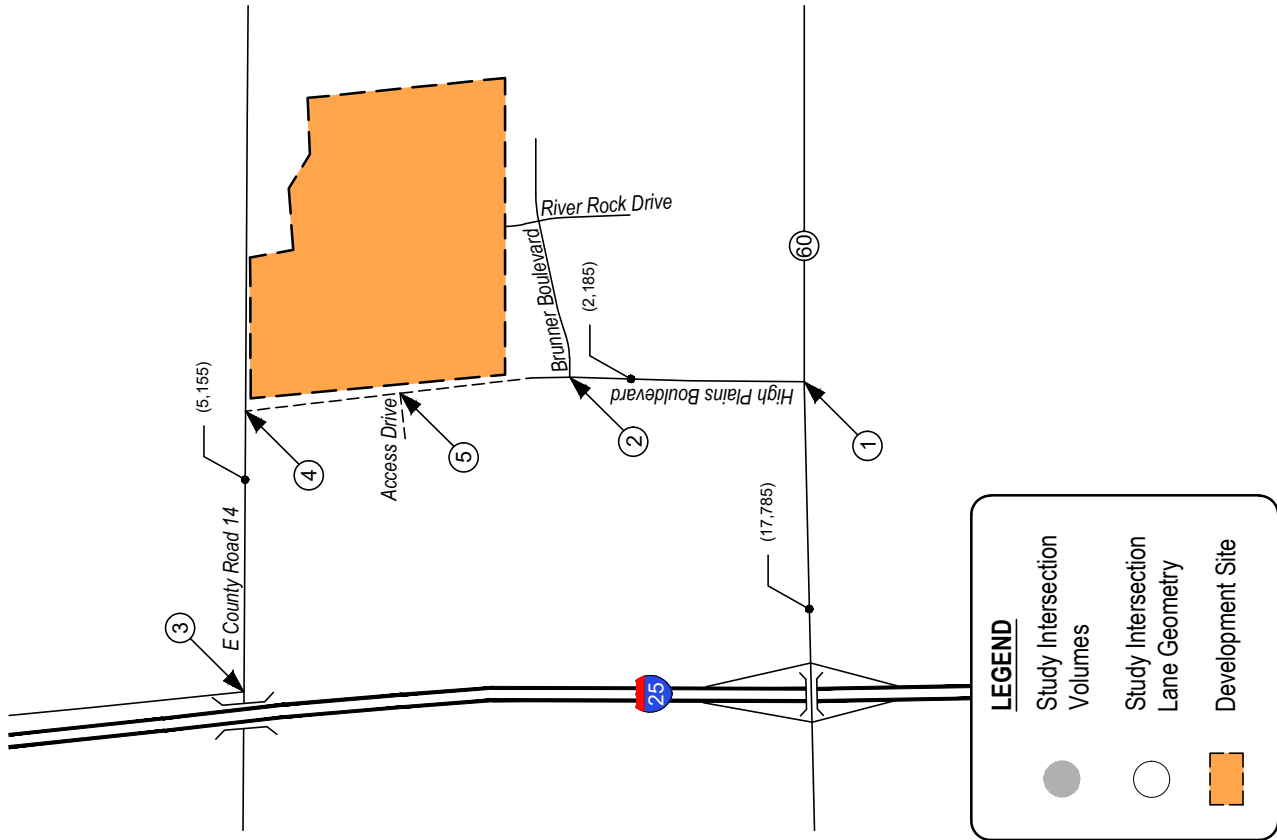


Figure 5
BACKGROUND TRAFFIC - YEAR 2042
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic



Peak Hour Intersection Levels of Service – Background Traffic

As with existing traffic conditions, the operations of study intersections were analyzed under background conditions, without the proposed development, using the SYNCHRO computer program.

Background traffic level of service analysis results for Year 2024 are listed in Table 2. Year 2024 operational results are summarized in Table 3.

Definitions of levels of service are given in Appendix B. Intersection capacity worksheets are provided in Appendix C.

Table 2 – Intersection Capacity Analysis Summary – Background Traffic – Year 2024

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
SH 60 / High Plains Boulevard (Stop-Controlled) Eastbound Left Southbound Left Southbound Right	A C C	A E B
High Plains Boulevard / Brunner Boulevard (Stop-Controlled) Westbound Left and Right Southbound Left and Through	A A	B A
E County Road 14 / I-25 Frontage Road (Stop-Controlled) Eastbound Left and Through Southbound Left and Right	A B	A B
E County Road 14 / High Plains Boulevard (Stop-Controlled) Westbound Left and Through Northbound Left and Right	A A	A A
High Plains Boulevard / Access Drive (Stop-Controlled) Eastbound Left Eastbound Right Northbound Left	A A A	B A A

Key: Stop-Controlled Intersection: Level of Service

Background Traffic Analysis Results – Year 2024

Year 2024 background traffic analysis indicates that the unsignalized intersection of State Highway 60 with High Plains Boulevard has turning movement operations at or better than LOS C during the AM peak traffic hour and LOS B or better during the PM peak traffic hour. Exceptions would include the southbound left turning movement which operates at LOS E during the PM peak traffic hour. The LOS E operation is attributed to the high through traffic volumes along State Highway 60 and the stop-controlled nature of the intersection.

The unsignalized intersection of High Plains Boulevard with Brunner Boulevard has turning movement operations at LOS A during the AM peak traffic hour and LOS B or better during the PM peak traffic hour.

The unsignalized intersection of E County Road 14 with I-25 Frontage Road has turning movement operations at or better than LOS B during both the AM and PM peak traffic hours.

The unsignalized intersection of E County Road 14 with High Plains Boulevard has turning movement operations at LOS A during both the AM and PM peak traffic hours.

The unsignalized intersection of High Plains Boulevard with Access Drive has turning movement operations at LOS A during the AM peak traffic hour and LOS B or better during the PM peak traffic hour.

Table 3 – Intersection Capacity Analysis Summary – Background Traffic – Year 2042

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
SH 60 / High Plains Boulevard (Signalized)	B (13.1)	A (8.1)
High Plains Boulevard / Brunner Boulevard (Stop-Controlled)		
Westbound Left and Right	B	B
Southbound Left and Through	A	A
E County Road 14 / I-25 Frontage Road (Stop-Controlled)		
Eastbound Left and Through	A	A
Southbound Left and Right	B	D
E County Road 14 / High Plains Boulevard (Stop-Controlled)		
Westbound Left and Through	A	A
Northbound Left and Right	A	B
High Plains Boulevard / Access Drive (Stop-Controlled)		
Eastbound Left	A	B
Eastbound Right	A	A
Northbound Left	A	A

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)
 Stop-Controlled Intersection: Level of Service

Background Traffic Analysis Results – Year 2042

By Year 2042 and without the proposed development, the study intersection of State Highway 60 with High Plains Boulevard experiences LOS B operations during the AM peak traffic hour and LOS A operations during the PM peak traffic hour.

The study intersection of High Plains Boulevard with Brunner Boulevard experiences LOS B or better operations during both the AM and PM peak traffic hours.

The study intersection of E County Road 14 with I-25 Frontage Road experiences LOS B or better operations during the AM peak traffic hour and LOS D or better operations during the PM peak traffic hour.

The study intersection of E County Road 14 with High Plains Boulevard experiences LOS A operations during the AM peak traffic hour and LOS B or better operations during the PM peak traffic hour.

The study intersection of High Plains Boulevard with Access Drive experiences LOS A operations during the AM peak traffic hour and LOS B or better operations during the PM peak traffic hour.

IV. Proposed Project Traffic

Trip Generation

Standard traffic generation characteristics compiled by the Institute of Transportation Engineers (ITE) in their report entitled Trip Generation Manual, 11th Edition, were applied to the proposed land use in order to estimate average daily traffic (ADT), AM Peak Hour, and PM Peak Hour vehicle trips. A vehicle trip is defined as a one-way vehicle movement from a point of origin to a point of destination.

The ITE land use codes 210 (Single-Family Detached Housing) and 220 (Multifamily Housing (Low-Rise)) were used for estimating trip generation because of their best fit to the proposed land use descriptions.

Trip generation rates used in this study are presented in Table 4.

Table 4 – Trip Generation Rates

ITE CODE	LAND USE	UNIT	TRIP GENERATION RATES						
			24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
				ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
210	Single-Family Detached Housing	DU	9.43	0.18	0.52	0.70	0.59	0.35	0.94
220	Multifamily Housing (Low-Rise)	DU	6.74	0.10	0.30	0.40	0.32	0.19	0.51

Key: DU = Dwelling Units.

Table 5 illustrates projected ADT, AM Peak Hour, and PM Peak Hour traffic volumes likely generated by the proposed development upon build-out.

Table 5 – Trip Generation Summary

ITE CODE	LAND USE	SIZE	DU	TOTAL TRIPS GENERATED						
				24 HOUR	AM PEAK HOUR			PM PEAK HOUR		
					ENTER	EXIT	TOTAL	ENTER	EXIT	TOTAL
210	Single-Family Detached Housing	401	DU	3,781	73	208	281	237	139	377
220	Multifamily Housing (Low-Rise)	226	DU	1,523	22	69	90	73	43	115
<i>Total:</i>				5,305	95	276	371	310	182	492

Key: DU = Dwelling Units.

Note: All data and calculations above are subject to being rounded to nearest value.

Upon build-out, Table 5 illustrates that the proposed development has the potential to generate approximately 5,305 daily vehicle trips with 371 of those occurring during the morning peak hour and 492 during the afternoon peak hour.

Adjustments to Trip Generation Rates

A development of this type is not likely to attract trips from within area land uses nor pass-by or diverted link trips from the adjacent roadway system, therefore no trip reduction was taken in this analysis.

Trip Distribution

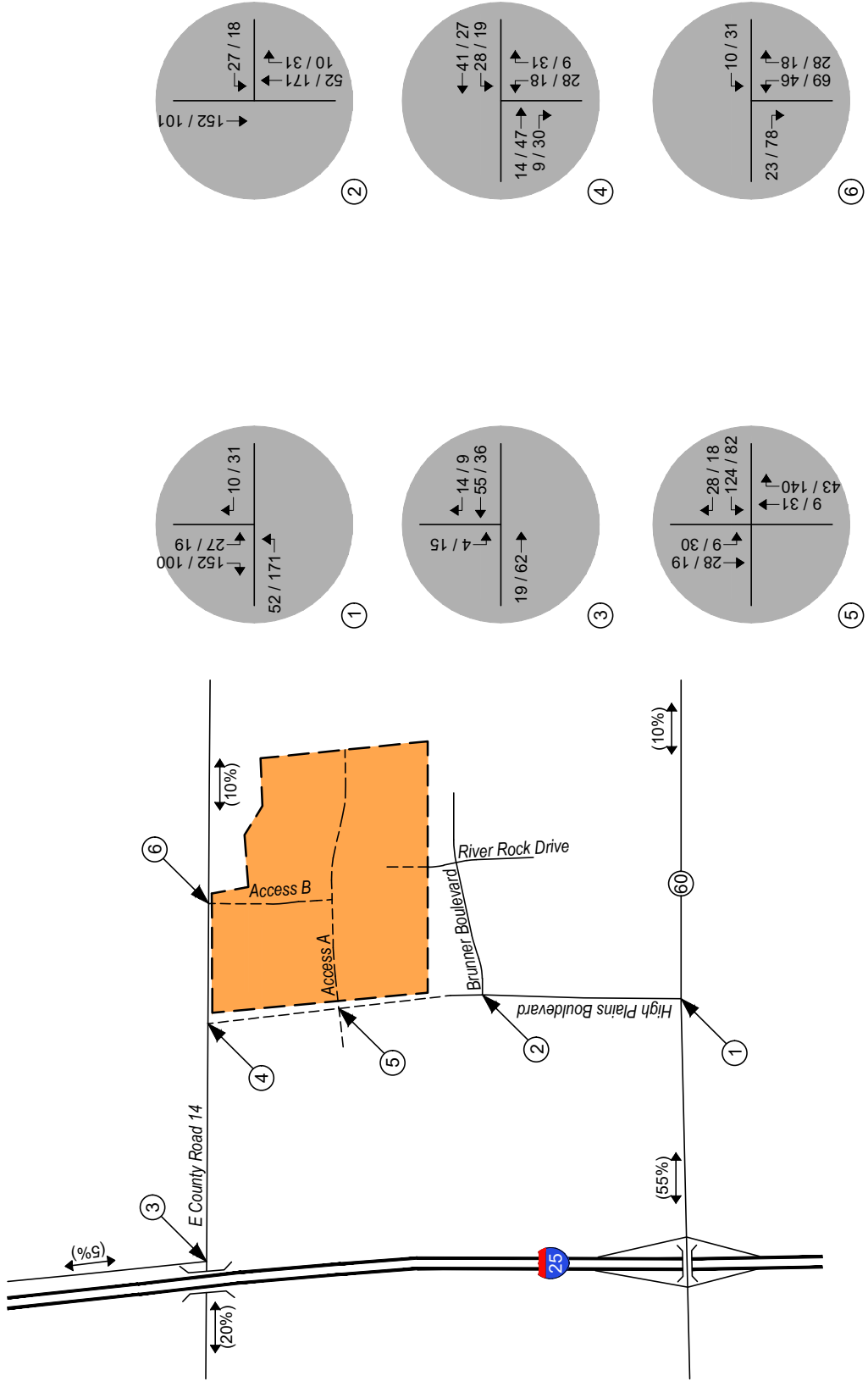
The overall directional distribution of site-generated traffic was determined based on the location of development site within the County, proposed and existing area land uses, allowed turning movements, available roadway network, and in reference to distribution patterns assumed in the previously prepared traffic study for the adjacent development.

Overall trip distribution patterns for the development are shown on Figure 6.

Trip Assignment

Traffic assignment is how generated and distributed vehicle trips are expected to be loaded onto the available roadway network.

Applying trip distribution patterns to site-generated traffic provides the overall site-generated trip assignments shown on Figure 6.



LEGEND

- Study Intersection
- Volumes
- Development Site

Figure 6
SITE DEVELOPMENT DISTRIBUTION
(%) : Overall
SITE-GENERATED
AM / PM Peak Hour

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V. Future Traffic Conditions With Proposed Developments

Total traffic is the traffic projected to be on area roadways with consideration of the proposed development. Total traffic includes background traffic projections for Years 2024 and 2042 with consideration of site-generated traffic. For analysis purposes, it was assumed that development construction would be completed by end of Year 2024.

Pursuant to area roadway improvement discussions provided in Section III, Year 2024 and Year 2042 total traffic conditions assume no additional roadway improvements to accommodate regional transportation demands. Roadway improvements associated with site development are expected to be limited to site access and frontage as required by the governing agency.

As previously discussed in Section III, Year 2024 and Year 2042 background traffic conditions indicate that the State Highway 60 and High Plains Boulevard intersection was found to be above the minimum vehicle volumes required to meet Warrant 3 – Peak Hour, from the MUTCD, for the installation of a traffic signal. To be consistent with background traffic assumptions, it is expected that signalization will have occurred after Year 2024. As such, the intersection was analyzed under a stop-controlled condition for Year 2024 and with traffic signal control by Year 2042.

Projected Year 2024 total traffic volumes and intersection geometry are shown in Figure 7.

Figure 8 shows projected total traffic volumes and intersection geometry for Year 2042.



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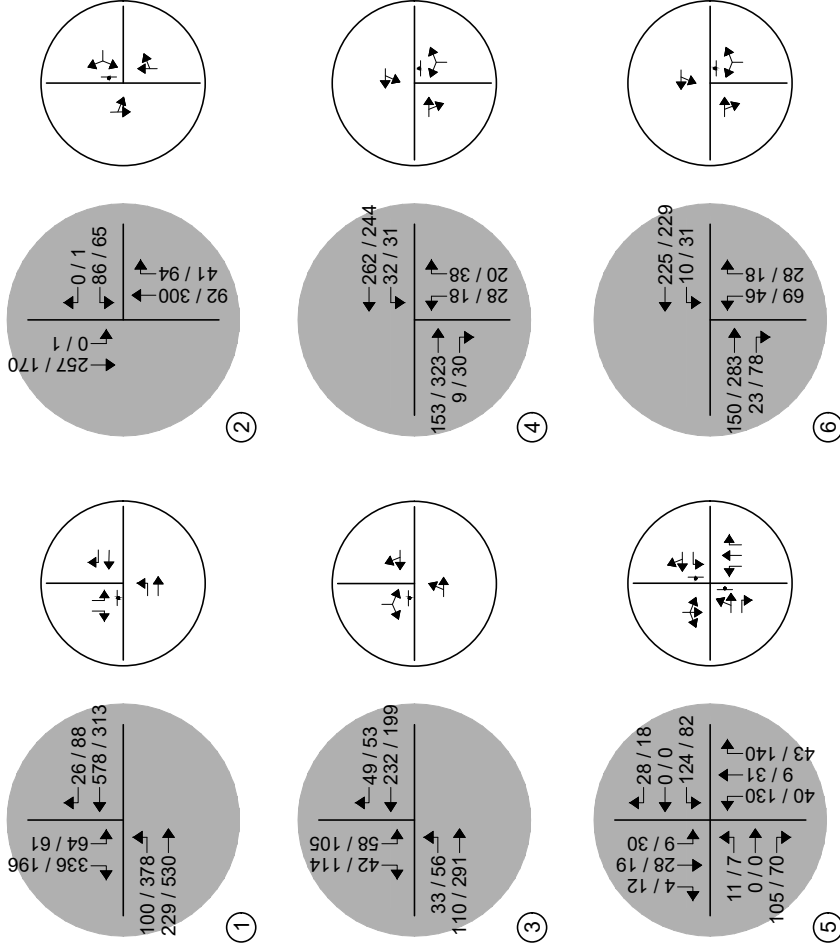
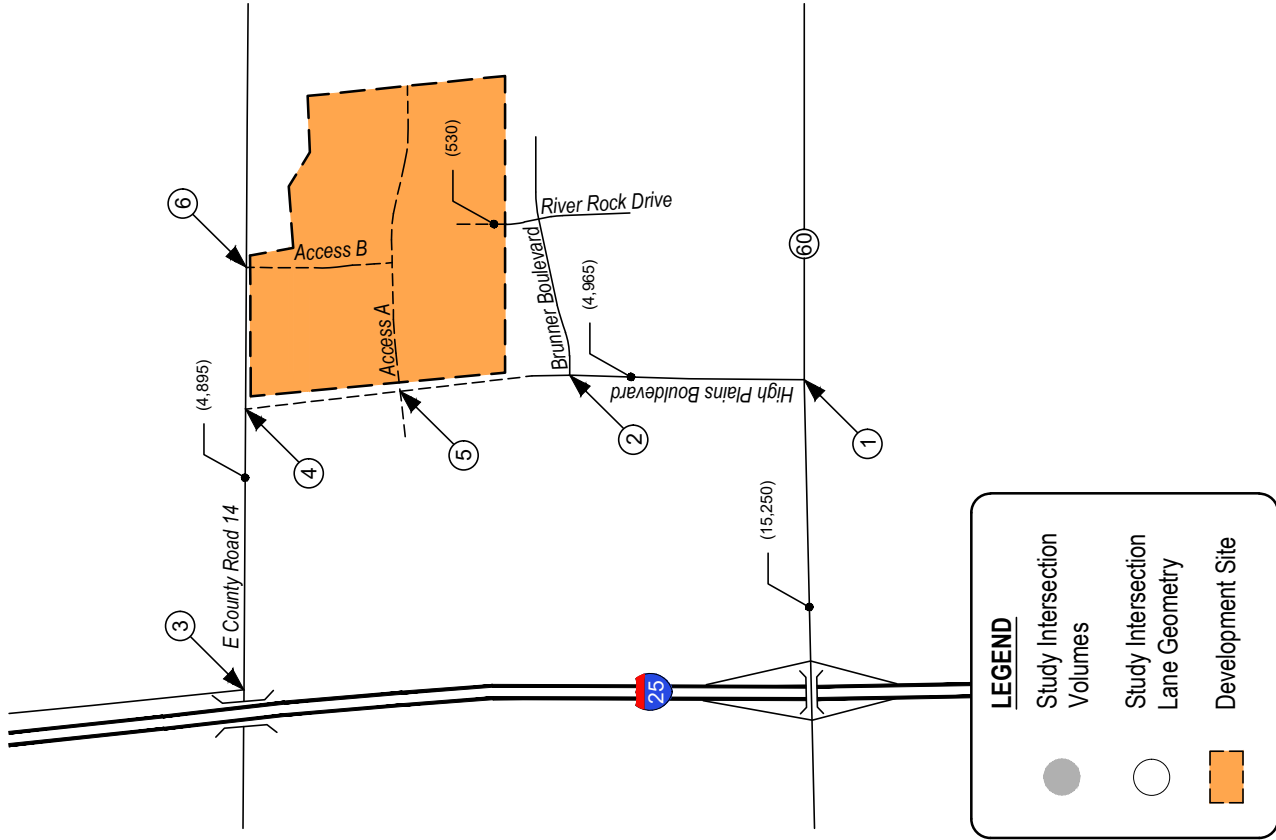


Figure 7
TOTAL TRAFFIC - YEAR 2024
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

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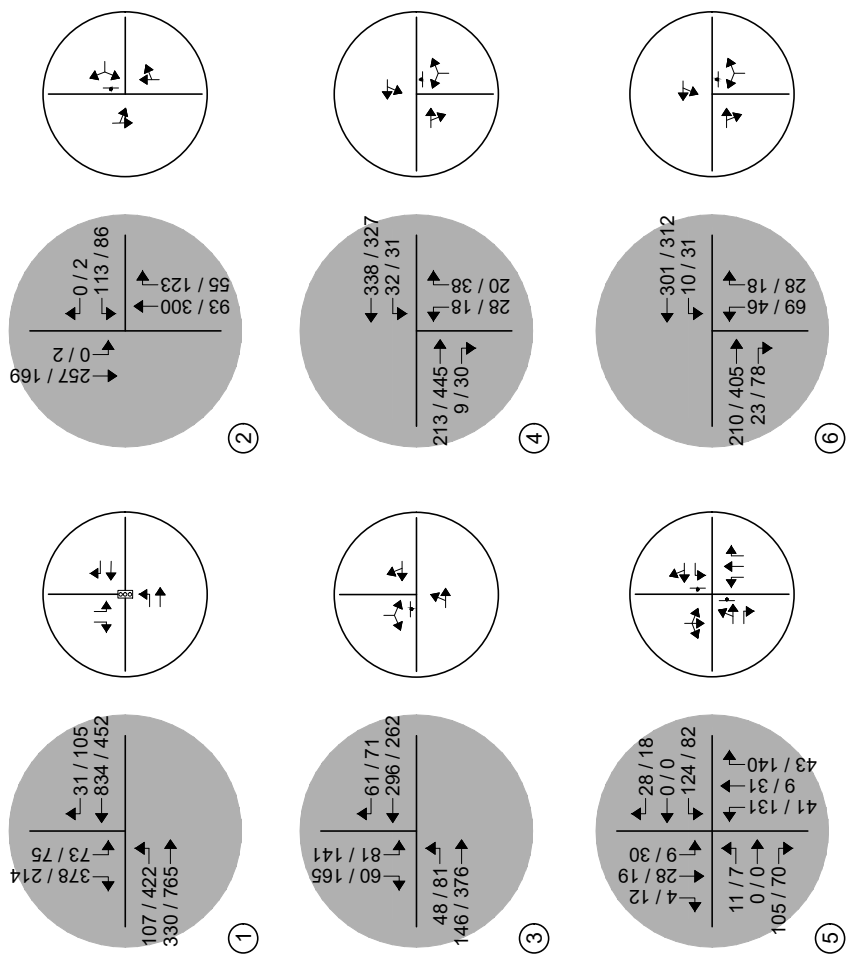
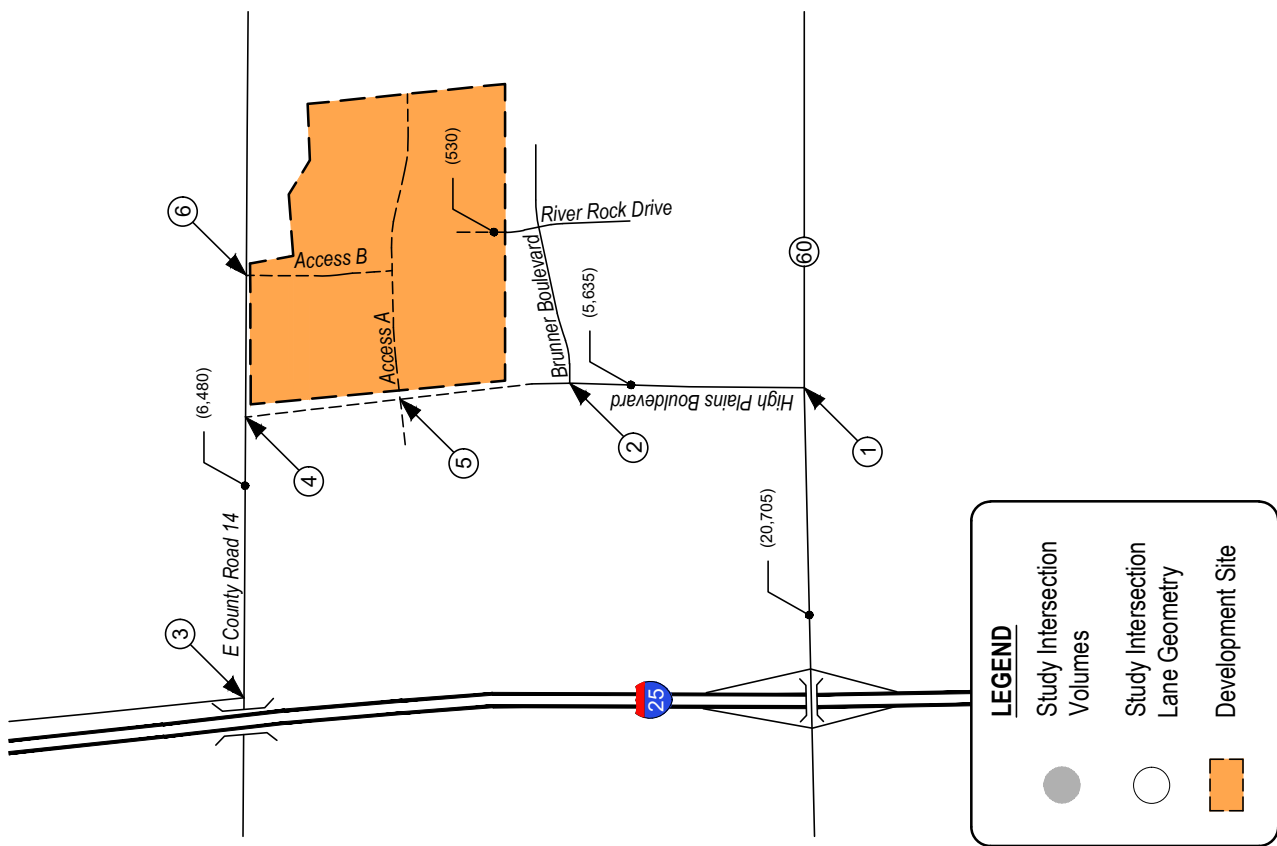


Figure 8
TOTAL TRAFFIC - YEAR 2042
Volumes & Intersection Geometry
AM / PM Peak Hour
(ADT) : Average Daily Traffic

VI. Project Impacts

The analyses and procedures described in this study were performed in accordance with the latest HCM and are based upon the worst-case conditions that occur during a typical weekday upon build-out of site development and analyzed land uses. Therefore, study intersections are likely to operate with traffic conditions better than those described within this study, which represent the peak hours of weekday operations only.

Peak Hour Intersection Levels of Service – Total Traffic

As with background traffic, the operations of the study intersections were analyzed under projected total traffic conditions using the SYNCHRO computer program. Total traffic level of service analysis results for Years 2024 and 2042 are summarized in Table 6 and Table 7, respectively.

Definitions of levels of service are given in Appendix B. Intersection capacity worksheets are provided in Appendix C.

Table 6 – Intersection Capacity Analysis Summary – Total Traffic – Year 2024

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
SH 60 / High Plains Boulevard (Stop-Controlled) Eastbound Left Southbound Left Southbound Right	A D D	B F B
High Plains Boulevard / Brunner Boulevard (Stop-Controlled) Westbound Left and Right Southbound Left and Through	B A	B A
E County Road 14 / I-25 Frontage Road (Stop-Controlled) Eastbound Left and Through Southbound Left and Right	A B	A C
E County Road 14 / High Plains Boulevard (Stop-Controlled) Westbound Left and Through Northbound Left and Right	A B	A B
High Plains Boulevard / Access A (Stop-Controlled) Eastbound Left and Through Eastbound Right Westbound Left and Through Westbound Right Northbound Left Southbound Left, Through and Right	B A B A A A	B A C A A A
E County Road 14 / Access B (Stop-Controlled) Westbound Left and Through Northbound Left and Right	A B	A B

Key: Stop-Controlled Intersection: Level of Service

Table 7 – Intersection Capacity Analysis Summary – Total Traffic – Year 2042

INTERSECTION LANE GROUPS	LEVEL OF SERVICE	
	AM PEAK HOUR	PM PEAK HOUR
SH 60 / High Plains Boulevard (Signalized)	C (23.3)	B (10.1)
High Plains Boulevard / Brunner Boulevard (Stop-Controlled)		
Westbound Left and Right	B	B
Southbound Left and Through	A	A
E County Road 14 / I-25 Frontage Road (Stop-Controlled)		
Eastbound Left and Through	A	A
Southbound Left and Right	C	E
E County Road 14 / High Plains Boulevard (Stop-Controlled)		
Westbound Left and Through	A	A
Northbound Left and Right	B	B
High Plains Boulevard / Access A (Stop-Controlled)		
Eastbound Left and Through	B	B
Eastbound Right	A	A
Westbound Left and Through	B	C
Westbound Right	A	A
Northbound Left	A	A
Southbound Left, Through and Right	A	A
E County Road 14 / Access B (Stop-Controlled)		
Westbound Left and Through	A	A
Northbound Left and Right	B	C

Key: Signalized Intersection: Level of Service (Control Delay in sec/veh)
 Stop-Controlled Intersection: Level of Service

Total Traffic Analysis Results Upon Development Build-Out

Table 7 illustrates how, by Year 2042 and upon development build-out, the signalized intersection of State Highway 60 with High Plains Boulevard shows an overall LOS C operation during the morning peak traffic hour and LOS B operation during the afternoon peak traffic hour. Compared to the background traffic analysis, the traffic generated by the proposed development is not expected to significantly change the operations of the study intersection.

The stop-controlled intersection of High Plains Boulevard with Brunner Boulevard is projected to have turning movement operations at LOS B or better for both the morning and afternoon peak traffic hours.

The stop-controlled intersection of E County Road 14 with I-25 Frontage Road is projected to have turning movement operations at LOS C or better for the morning peak traffic hour and LOS A for the afternoon peak traffic hour. Exceptions would include the southbound turning movements and which operate at LOS E during the PM peak traffic hour. The LOS E operations are attributed to the high through traffic volumes along E County Road 14 and the stop-controlled nature of the intersection.

It is to be noted that it is not uncommon for unsignalized movements to or from an arterial roadway, in urban areas, to operate with noticeable delays during peak traffic hours. It is recommended that CDOT and County Staff continue to monitor the E County Road 14 and I-25 Frontage Road intersection as area development occurs to determine when mitigation measures may be most appropriate.

The stop-controlled intersection of E County Road 14 with High Plains Boulevard is projected to have turning movement operations at LOS B or better for both the morning and afternoon peak traffic hours.

The stop-controlled intersection of High Plains Boulevard with Access A is projected to have turning movement operations at LOS B or better for the morning peak traffic hour and LOS C or better for the afternoon peak traffic hour.

The stop-controlled intersection of E County Road 14 with Access B is projected to have turning movement operations at LOS B or better for the morning peak traffic hour and LOS C or better for the afternoon peak traffic hour.

These intersection operations are similar to background conditions.

As discussed in Section I, it is noted that proposed internal site access to the existing adjacent subdivision via River Rock Drive is anticipated to provide operations comparable to or better than the adjacent study intersections. Due to the acceptable operations shown at the intersection of High Plains Boulevard with Brunner Boulevard, no significant impacts to intersections along Brunner Boulevard or River Rock Drive are anticipated. Furthermore, projected average daily traffic volumes at the River Rock Drive access, as shown on Figures 7 and 8, are estimated to be approximately ten percent of total daily traffic volumes generated by the development and are considered to be minor.

Auxiliary Lane Analysis

Auxiliary lanes for site development accesses are to be based on County's Engineering and Construction Criteria (Criteria)², and CDOT's State Highway Access Code (SHAC)³.

Considering development build-out, an evaluation of auxiliary lane requirements, pursuant to Section 8.7, Table 8-4 of the County's Criteria, as well as section 3.10 of the CDOT SHAC, reveals that left turn and right-turn deceleration lanes at Access A along High Plains Boulevard and Access B along E County Road 14 are required since the development's projected peak hour left turn and right turn ingress volumes exceed the County's thresholds of 10 and 25 vehicles per hour, respectively.

² Weld County Engineering and Construction Criteria, Atkins, January 2021.

³ State Highway Access Code, State of Colorado, March 2002.

VII. Conclusion

This traffic impact study is provided as a planning document and addresses the capacity, geometric, and control requirements associated with the development entitled High Plains Estates. This proposed development consists of a residential subdivision including a mix of single-family and multifamily housing. The development is located on the south side of E County Road 14 and west of High Plains Boulevard in Weld County, Colorado.

The study area examined in this analysis encompassed High Plains Boulevard between E County Road 14 and State Highway 60, and proposed site access drives.

Analysis was conducted for critical AM Peak Hour and PM Peak Hour traffic operations for existing traffic conditions, Year 2024 and Year 2042 background traffic conditions, and Year 2024 and Year 2042 total traffic conditions.

Under existing conditions, operational analysis shows that the unsignalized study intersections generally experience turning movement operations at or better than LOS C during both the morning and afternoon peak traffic hours.

Year 2024 background traffic analysis indicates that the unsignalized intersection of State Highway 60 with High Plains Boulevard has turning movement operations at or better than LOS C during the AM peak traffic hour and LOS B or better during the PM peak traffic hour. Exceptions would include the southbound left turning movement which operates at LOS E during the PM peak traffic hour. The LOS E operation is attributed to the high through traffic volumes along State Highway 60 and the stop-controlled nature of the intersection. The remaining unsignalized intersections have turning movement operations at or better than LOS B during either peak traffic hour.

By Year 2042 and without the proposed development, the signalized intersection of State Highway 60 with High Plains Boulevard experiences LOS B operations during the AM peak traffic hour and LOS A operations during the PM peak traffic hour. Stop-controlled study intersections experience LOS B or better operations during the AM peak traffic hour and LOS D or better during the PM peak traffic hour.

Analysis of future traffic conditions indicates that the addition of site-generated traffic is expected to create no negative impact to traffic operations for the existing and surrounding roadway system upon consideration of the various roadway and intersection control improvements assumed within this analysis. With all conservative assumptions defined in this analysis, the study intersections are projected to operate at future levels of service comparable to Year 2042 background traffic conditions. Proposed site accesses have long-term operations at LOS C or better during peak traffic periods and upon build-out.

APPENDIX A

Traffic Count Data

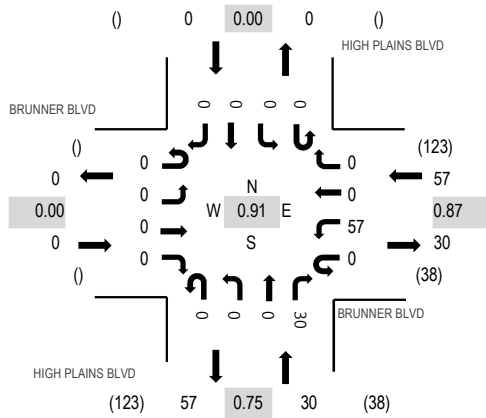
Location: 1 HIGH PLAINS BLVD & BRUNNER BLVD AM

Date: Wednesday, June 1, 2022

Peak Hour: 08:00 AM - 09:00 AM

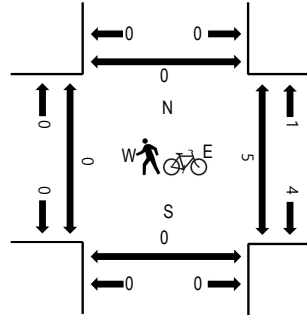
Peak 15-Minutes: 08:30 AM - 08:45 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	BRUNNER BLVD Eastbound				BRUNNER BLVD Westbound				HIGH PLAINS BLVD Northbound				HIGH PLAINS BLVD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	0	0	0	0	17	0	0	0	0	0	1	0	0	0	0	18	74	0	2	0	0
7:15 AM	0	0	0	0	0	15	0	0	0	0	0	2	0	0	0	0	17	76	0	0	0	0
7:30 AM	0	0	0	0	0	19	0	0	0	0	0	3	0	0	0	0	22	78	0	0	0	0
7:45 AM	0	0	0	0	0	15	0	0	0	0	0	2	0	0	0	0	17	80	0	2	0	0
8:00 AM	0	0	0	0	0	13	0	0	0	0	0	7	0	0	0	0	20	87	0	0	0	0
8:15 AM	0	0	0	0	0	10	0	0	0	0	0	9	0	0	0	0	19		0	2	0	0
8:30 AM	0	0	0	0	0	20	0	0	0	0	0	4	0	0	0	0	24		0	2	0	0
8:45 AM	0	0	0	0	0	14	0	0	0	0	0	10	0	0	0	0	24		0	1	0	0
Count Total	0	0	0	0	0	123	0	0	0	0	0	38	0	0	0	0	161		0	9	0	0
Peak Hour	0	0	0	0	0	57	0	0	0	0	0	30	0	0	0	0	87		0	5	0	0

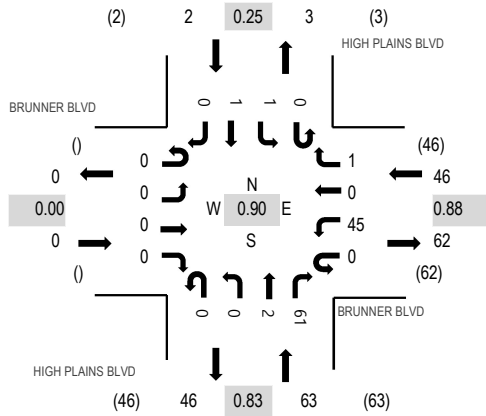
Location: 1 HIGH PLAINS BLVD & BRUNNER BLVD PM

Date: Wednesday, June 1, 2022

Peak Hour: 04:00 PM - 05:00 PM

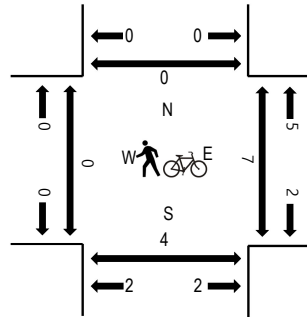
Peak 15-Minutes: 04:45 PM - 05:00 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	BRUNNER BLVD Eastbound				BRUNNER BLVD Westbound				HIGH PLAINS BLVD Northbound				HIGH PLAINS BLVD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	0	0	0	0	10	0	0	0	0	0	14	0	0	0	0	24	111	0	2	4	0
4:15 PM	0	0	0	0	0	13	0	0	0	0	0	14	0	1	1	0	29		0	0	0	0
4:30 PM	0	0	0	0	0	10	0	1	0	0	1	15	0	0	0	0	27		0	3	0	0
4:45 PM	0	0	0	0	0	12	0	0	0	0	1	18	0	0	0	0	31		0	1	0	0
Count Total	0	0	0	0	0	45	0	1	0	0	2	61	0	1	1	0	111		0	6	4	0
Peak Hour	0	0	0	0	0	45	0	1	0	0	2	61	0	1	1	0	111		0	6	4	0

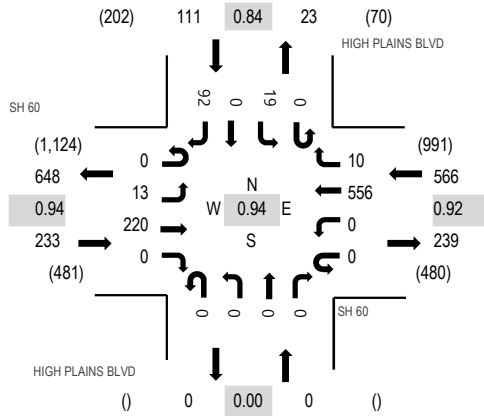
Location: 2 HIGH PLAINS BLVD & SH 60 AM

Date: Wednesday, June 1, 2022

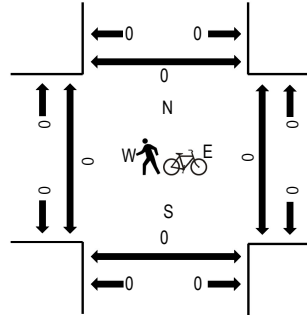
Peak Hour: 07:00 AM - 08:00 AM

Peak 15-Minutes: 07:15 AM - 07:30 AM

Peak Hour - All Vehicles



Peak Hour - Pedestrians/Bicycles on Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts

Interval Start Time	SH 60 Eastbound				SH 60 Westbound				HIGH PLAINS BLVD Northbound				HIGH PLAINS BLVD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	1	48	0	0	0	137	1	0	0	0	0	0	3	0	24	214	910	0	0	0	0
7:15 AM	0	6	56	0	0	0	151	3	0	0	0	0	6	0	21	243	884	0	0	0	0	
7:30 AM	0	5	51	0	0	0	131	4	0	0	0	0	4	0	29	224	843	0	0	0	0	
7:45 AM	0	1	65	0	0	0	137	2	0	0	0	0	6	0	18	229	823	0	0	0	0	
8:00 AM	0	8	51	0	0	0	103	4	0	0	0	0	4	0	18	188	764	0	0	0	0	
8:15 AM	0	8	58	0	0	0	110	5	0	0	0	0	3	0	18	202		0	0	0	0	
8:30 AM	0	2	55	0	0	0	110	8	0	0	0	0	9	0	20	204		0	0	0	0	
8:45 AM	0	9	57	0	0	0	82	3	0	0	0	0	4	0	15	170		0	0	0	0	
Count Total	0	40	441	0	0	0	961	30	0	0	0	0	39	0	163	1,674		0	0	0	0	
Peak Hour	0	13	220	0	0	0	556	10	0	0	0	0	19	0	92	910		0	0	0	0	



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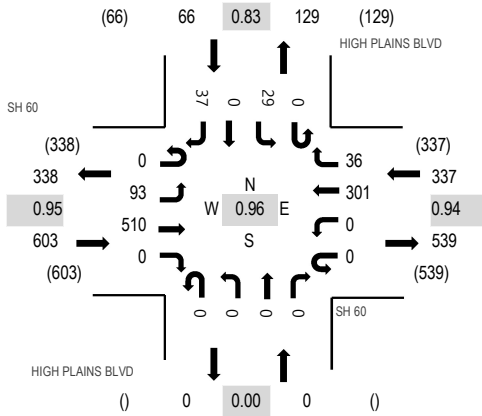
Location: 2 HIGH PLAINS BLVD & SH 60 PM

Date: Wednesday, June 1, 2022

Peak Hour: 04:00 PM - 05:00 PM

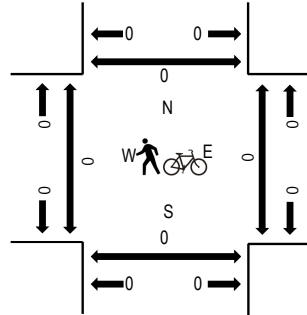
Peak 15-Minutes: 04:15 PM - 04:30 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	SH 60 Eastbound				SH 60 Westbound				HIGH PLAINS BLVD Northbound				HIGH PLAINS BLVD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	20	111	0	0	0	80	10	0	0	0	0	0	4	0	14	239	1,006	0	0	0	0
4:15 PM	0	28	130	0	0	0	82	6	0	0	0	0	5	0	10	261		0	0	0	0	
4:30 PM	0	24	135	0	0	0	72	10	0	0	0	0	8	0	5	254		0	0	0	0	
4:45 PM	0	21	134	0	0	0	67	10	0	0	0	0	12	0	8	252		0	0	0	0	
Count Total	0	93	510	0	0	0	301	36	0	0	0	0	29	0	37	1,006		0	0	0	0	
Peak Hour	0	93	510	0	0	0	301	36	0	0	0	0	29	0	37	1,006		0	0	0	0	

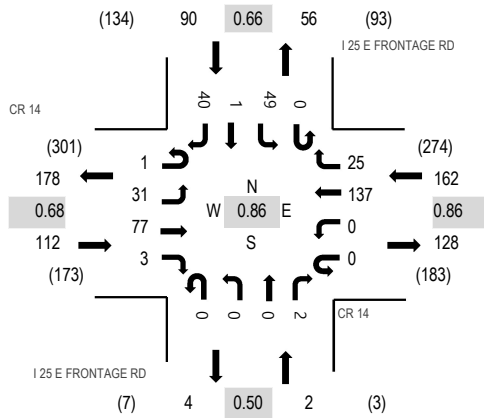
Location: 5 I 25 E FRONTAGE RD & CR 14 AM

Date: Wednesday, June 1, 2022

Peak Hour: 07:00 AM - 08:00 AM

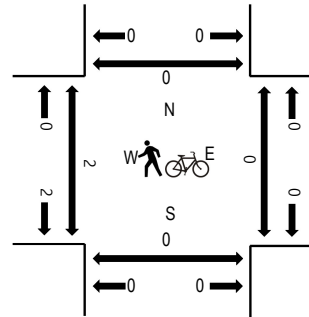
Peak 15-Minutes: 07:00 AM - 07:15 AM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	CR 14 Eastbound				CR 14 Westbound				I 25 E FRONTAGE RD Northbound				I 25 E FRONTAGE RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	12	28	1	0	0	33	4	0	0	0	1	0	18	0	10	107	366	0	0	0	0
7:15 AM	1	6	14	2	0	0	28	6	0	0	0	1	0	18	0	16	92	333	2	0	0	0
7:30 AM	0	3	24	0	0	0	40	7	0	0	0	0	0	11	0	11	96	292	0	0	0	0
7:45 AM	0	10	11	0	0	0	36	8	0	0	0	0	0	2	1	3	71	248	0	0	0	0
8:00 AM	1	4	15	0	0	0	30	6	0	0	0	0	0	7	0	11	74	218	0	0	0	0
8:15 AM	0	7	5	0	0	2	22	5	0	1	0	0	0	6	0	3	51		0	0	0	0
8:30 AM	0	7	12	0	0	0	22	3	0	0	0	0	0	1	0	7	52		0	0	0	0
8:45 AM	0	4	6	0	0	0	21	1	0	0	0	0	0	3	1	5	41		0	0	0	0
Count Total	2	53	115	3	0	2	232	40	0	1	0	2	0	66	2	66	584		2	0	0	0
Peak Hour	1	31	77	3	0	0	137	25	0	0	0	2	0	49	1	40	366		2	0	0	0

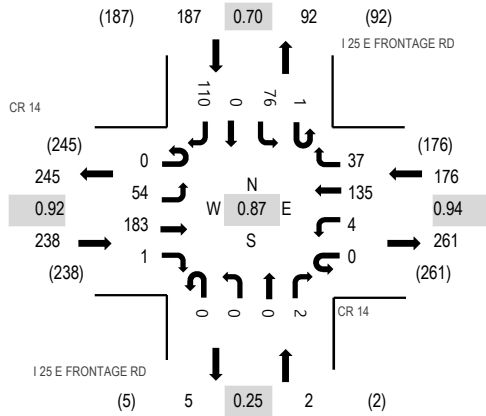
Location: 5 I 25 E FRONTAGE RD & CR 14 PM

Date: Wednesday, June 1, 2022

Peak Hour: 04:00 PM - 05:00 PM

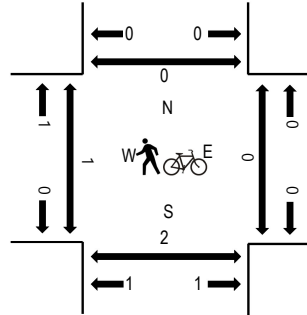
Peak 15-Minutes: 04:30 PM - 04:45 PM

Peak Hour - All Vehicles



Note: Total study counts contained in parentheses.

Peak Hour - Pedestrians/Bicycles on Crosswalk



Traffic Counts

Interval Start Time	CR 14 Eastbound				CR 14 Westbound				I 25 E FRONTAGE RD Northbound				I 25 E FRONTAGE RD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	13	50	1	0	0	37	10	0	0	0	2	0	8	0	22	143	603	1	0	1	0
4:15 PM	0	14	40	0	0	1	35	10	0	0	0	0	1	12	0	21	134		0	0	0	0
4:30 PM	0	16	49	0	0	0	33	9	0	0	0	0	0	30	0	37	174		0	0	0	0
4:45 PM	0	11	44	0	0	3	30	8	0	0	0	0	0	26	0	30	152		0	0	1	0
Count Total	0	54	183	1	0	4	135	37	0	0	0	2	1	76	0	110	603		1	0	2	0
Peak Hour	0	54	183	1	0	4	135	37	0	0	0	2	1	76	0	110	603		1	0	2	0

Site Code: 6
Station ID:
HIGH PLAINS BLVD S.O. BRUNNER BLVD

Latitude: 0' 0.0000 Undefined

Start Time	01-Jun-22 Wed	NB	SB	Total
12:00 AM		7	0	7
01:00		2	0	2
02:00		0	2	2
03:00		2	2	4
04:00		0	8	8
05:00		4	42	46
06:00		10	67	77
07:00		8	66	74
08:00		30	57	87
09:00		41	53	94
10:00		35	55	90
11:00		49	39	88
12:00 PM		35	40	75
01:00		39	35	74
02:00		46	33	79
03:00		44	34	78
04:00		63	46	109
05:00		78	48	126
06:00		62	41	103
07:00		43	28	71
08:00		53	22	75
09:00		31	15	46
10:00		17	6	23
11:00		11	8	19
Total		710	747	1457
Percent		48.7%	51.3%	
AM Peak				
Vol.	-	11:00	06:00	-
	-	49	67	-
PM Peak				
Vol.	-	17:00	17:00	-
	-	78	48	-
Grand Total		710	747	1457
Percent		48.7%	51.3%	
ADT		ADT 1,457		AADT 1,457

Site Code: 7
Station ID:
SH 60 W.O. HIGH PLAINS BLVD

Latitude: 0' 0.0000 Undefined

Start Time	01-Jun-22 Wed	EB	WB	Total
12:00 AM		46	12	58
01:00		23	8	31
02:00		15	21	36
03:00		14	29	43
04:00		13	131	144
05:00		85	352	437
06:00		179	599	778
07:00		233	648	881
08:00		248	476	724
09:00		202	402	604
10:00		234	397	631
11:00		321	343	664
12:00 PM		335	387	722
01:00		288	336	624
02:00		375	328	703
03:00		456	367	823
04:00		603	338	941
05:00		614	324	938
06:00		436	240	676
07:00		315	183	498
08:00		258	134	392
09:00		166	96	262
10:00		92	54	146
11:00		73	27	100
Total		5624	6232	11856
Percent		47.4%	52.6%	
AM Peak	-	11:00	07:00	-
Vol.	-	321	648	-
PM Peak	-	17:00	12:00	-
Vol.	-	614	387	-
Grand Total		5624	6232	11856
Percent		47.4%	52.6%	
ADT		ADT 11,856	ADT 11,856	AADT 11,856

Site Code: 8
Station ID:
CR 14 E.O. 1 25 E FRONTAGE RD
Latitude: 0' 0.0000 Undefined

Start Time	01-Jun-22 Wed	EB	WB	Total
12:00 AM		3	5	8
01:00		1	3	4
02:00		4	2	6
03:00		5	4	9
04:00		9	11	20
05:00		23	48	71
06:00		90	126	216
07:00		128	162	290
08:00		55	112	167
09:00		63	78	141
10:00		78	94	172
11:00		81	77	158
12:00 PM		95	72	167
01:00		88	67	155
02:00		109	100	209
03:00		150	108	258
04:00		261	176	437
05:00		260	135	395
06:00		120	97	217
07:00		82	39	121
08:00		39	26	65
09:00		42	32	74
10:00		37	13	50
11:00		18	7	25
Total		1841	1594	3435
Percent		53.6%	46.4%	
AM Peak		07:00	07:00	07:00
Vol.		128	162	290
PM Peak		16:00	16:00	16:00
Vol.		261	176	437
Grand Total		1841	1594	3435
Percent		53.6%	46.4%	
ADT		ADT 3,435	ADT 3,435	

APPENDIX B

Level of Service Definitions

The following information can be found in the Highway Capacity Manual, Transportation Research Board, 2016: Chapter 19 – Signalized Intersections and Chapter 20 – Two-Way Stop Controlled Intersections.

Automobile Level of Service (LOS) for Signalized Intersections

Levels of service are defined to represent reasonable ranges in control delay.

LOS A

Describes operations with a control delay of 10 s/veh or less and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is exceptionally favorable or the cycle length is very short. If it is due to favorable progression, most vehicles arrive during the green indication and travel through the intersection without stopping.

LOS B

Describes operations with control delay between 10 and 20 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.

LOS C

Describes operations with control delay between 20 and 35 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when progression is favorable or the cycle length is moderate. Individual *cycle failures* (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.

LOS D

Describes operations with control delay between 35 and 55 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.

LOS E

Describes operations with control delay between 55 and 80 s/veh and a volume-to-capacity ratio no greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.

LOS F

Describes operations with control delay exceeding 80 s/veh or a volume-to-capacity ratio greater than 1.0. This level is typically assigned when the volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.

Level of Service (LOS) for Unsignalized TWSC Intersections

Level of Service (v/c ≤ 1.0)	Average Control Delay (s/veh)
A	0 - 10
B	> 10 - 15
C	> 15 - 25
D	> 25 - 35
E	> 35 - 50
F	> 50

APPENDIX C

Capacity Worksheets

HCM 6th TWSC
1: SH 60 & High Plains Boulevard

Existing Traffic Volumes
AM Peak Hour

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↑	↗	↘	↗
Traffic Vol, veh/h	13	220	556	10	19	92
Future Vol, veh/h	13	220	556	10	19	92
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	520	-	-	375	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	239	604	11	21	100

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	615	0	0	871	604
Stage 1	-	-	-	604	-
Stage 2	-	-	-	267	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	965	-	-	322	498
Stage 1	-	-	-	546	-
Stage 2	-	-	-	778	-
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	965	-	-	317	498
Mov Cap-2 Maneuver	-	-	-	317	-
Stage 1	-	-	-	538	-
Stage 2	-	-	-	778	-

Approach	EB	WB	SB
HCM Control Delay, s	0.5	0	14.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	965	-	-	-	317	498
HCM Lane V/C Ratio	0.015	-	-	-	0.065	0.201
HCM Control Delay (s)	8.8	-	-	-	17.1	14
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0	-	-	-	0.2	0.7

HCM 6th TWSC
2: High Plains Boulevard & Brunner Boulevard

Existing Traffic Volumes
AM Peak Hour

Intersection						
Int Delay, s/veh	5.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T		T	
Traffic Vol, veh/h	57	0	0	30	0	0
Future Vol, veh/h	57	0	0	30	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	62	0	0	33	0	0

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	18	17	0	0	33
Stage 1	17	-	-	-	-
Stage 2	1	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	1000	1062	-	-	1579
Stage 1	1006	-	-	-	-
Stage 2	1022	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	1000	1062	-	-	1579
Mov Cap-2 Maneuver	1000	-	-	-	-
Stage 1	1006	-	-	-	-
Stage 2	1022	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1000	1579
HCM Lane V/C Ratio	-	-	0.062	-
HCM Control Delay (s)	-	-	8.8	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0

HCM 6th TWSC
3: E County Road 14 & I-25 Frontage Road

Existing Traffic Volumes
AM Peak Hour

Intersection						
Int Delay, s/veh	3.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	32	77	137	25	49	40
Future Vol, veh/h	32	77	137	25	49	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	35	84	149	27	53	43

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	176	0	-	0	317
Stage 1	-	-	-	-	163
Stage 2	-	-	-	-	154
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1400	-	-	-	676
Stage 1	-	-	-	-	866
Stage 2	-	-	-	-	874
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1400	-	-	-	658
Mov Cap-2 Maneuver	-	-	-	-	658
Stage 1	-	-	-	-	843
Stage 2	-	-	-	-	874

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1400	-	-	-	743
HCM Lane V/C Ratio	0.025	-	-	-	0.13
HCM Control Delay (s)	7.6	0	-	-	10.6
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.4

HCM 6th TWSC
1: SH 60 & High Plains Boulevard

Existing Traffic Volumes
PM Peak Hour

Intersection						
Int Delay, s/veh	1.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↑	↗	↘	↗
Traffic Vol, veh/h	93	510	301	36	29	37
Future Vol, veh/h	93	510	301	36	29	37
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	520	-	-	375	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	101	554	327	39	32	40

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	366	0	-	0	1083
Stage 1	-	-	-	-	327
Stage 2	-	-	-	-	756
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1193	-	-	-	240
Stage 1	-	-	-	-	731
Stage 2	-	-	-	-	464
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	1193	-	-	-	220
Mov Cap-2 Maneuver	-	-	-	-	220
Stage 1	-	-	-	-	669
Stage 2	-	-	-	-	464

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	16.4
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1193	-	-	-	220	714
HCM Lane V/C Ratio	0.085	-	-	-	0.143	0.056
HCM Control Delay (s)	8.3	-	-	-	24.1	10.3
HCM Lane LOS	A	-	-	-	C	B
HCM 95th %tile Q(veh)	0.3	-	-	-	0.5	0.2

HCM 6th TWSC
2: High Plains Boulevard & Brunner Boulevard

Existing Traffic Volumes
PM Peak Hour

Intersection						
Int Delay, s/veh	3.8					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T		T	
Traffic Vol, veh/h	45	1	2	61	1	1
Future Vol, veh/h	45	1	2	61	1	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	49	1	2	66	1	1

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	38	35	0	0	68
Stage 1	35	-	-	-	-
Stage 2	3	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	974	1038	-	-	1533
Stage 1	987	-	-	-	-
Stage 2	1020	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	973	1038	-	-	1533
Mov Cap-2 Maneuver	973	-	-	-	-
Stage 1	987	-	-	-	-
Stage 2	1019	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	3.7
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	974	1533
HCM Lane V/C Ratio	-	-	0.051	0.001
HCM Control Delay (s)	-	-	8.9	7.3
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.2	0

HCM 6th TWSC
3: E County Road 14 & I-25 Frontage Road

Existing Traffic Volumes
PM Peak Hour

Intersection						
Int Delay, s/veh	4.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	54	183	135	37	77	110
Future Vol, veh/h	54	183	135	37	77	110
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	59	199	147	40	84	120

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	187	0	0	484	167
Stage 1	-	-	-	167	-
Stage 2	-	-	-	317	-
Critical Hdwy	4.12	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	3.518	3.318
Pot Cap-1 Maneuver	1387	-	-	542	877
Stage 1	-	-	-	863	-
Stage 2	-	-	-	738	-
Platoon blocked, %		-	-		
Mov Cap-1 Maneuver	1387	-	-	516	877
Mov Cap-2 Maneuver	-	-	-	516	-
Stage 1	-	-	-	822	-
Stage 2	-	-	-	738	-

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	12.5
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1387	-	-	-	681
HCM Lane V/C Ratio	0.042	-	-	-	0.298
HCM Control Delay (s)	7.7	0	-	-	12.5
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.2

HCM 6th TWSC
1: SH 60 & High Plains Boulevard

Background Traffic Volumes
AM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	4.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↑	↗	↘	↗
Traffic Vol, veh/h	48	229	578	16	37	184
Future Vol, veh/h	48	229	578	16	37	184
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	520	-	-	375	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	249	628	17	40	200

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	645	0	-	0	981 628
Stage 1	-	-	-	-	628 -
Stage 2	-	-	-	-	353 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	940	-	-	-	277 483
Stage 1	-	-	-	-	532 -
Stage 2	-	-	-	-	711 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	940	-	-	-	262 483
Mov Cap-2 Maneuver	-	-	-	-	262 -
Stage 1	-	-	-	-	503 -
Stage 2	-	-	-	-	711 -

Approach	EB	WB	SB
HCM Control Delay, s	1.6	0	18.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	940	-	-	-	262	483
HCM Lane V/C Ratio	0.056	-	-	-	0.154	0.414
HCM Control Delay (s)	9.1	-	-	-	21.2	17.6
HCM Lane LOS	A	-	-	-	C	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.5	2

HCM 6th TWSC
2: High Plains Boulevard & Brunner Boulevard

Background Traffic Volumes
AM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	2.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	59	0	40	31	0	105
Future Vol, veh/h	59	0	40	31	0	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	64	0	43	34	0	114

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	174	60	0	0	77
Stage 1	60	-	-	-	-
Stage 2	114	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	816	1005	-	-	1522
Stage 1	963	-	-	-	-
Stage 2	911	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	816	1005	-	-	1522
Mov Cap-2 Maneuver	816	-	-	-	-
Stage 1	963	-	-	-	-
Stage 2	911	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.8	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	816	1522
HCM Lane V/C Ratio	-	-	0.079	-
HCM Control Delay (s)	-	-	9.8	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0

HCM 6th TWSC
 3: E County Road 14 & I-25 Frontage Road

Background Traffic Volumes
 AM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	3.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	33	91	177	35	54	42
Future Vol, veh/h	33	91	177	35	54	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	99	192	38	59	46

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	230	0	-	0	382 211
Stage 1	-	-	-	-	211 -
Stage 2	-	-	-	-	171 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1338	-	-	-	620 829
Stage 1	-	-	-	-	824 -
Stage 2	-	-	-	-	859 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1338	-	-	-	603 829
Mov Cap-2 Maneuver	-	-	-	-	603 -
Stage 1	-	-	-	-	801 -
Stage 2	-	-	-	-	859 -

Approach	EB	WB	SB
HCM Control Delay, s	2.1	0	11.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1338	-	-	-	685
HCM Lane V/C Ratio	0.027	-	-	-	0.152
HCM Control Delay (s)	7.8	0	-	-	11.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.5

HCM 6th TWSC
4: High Plains Boulevard & E County Road 14

Background Traffic Volumes
AM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	139	0	4	221	0	11
Future Vol, veh/h	139	0	4	221	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	151	0	4	240	0	12

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	151	0	399
Stage 1	-	-	-	-	151
Stage 2	-	-	-	-	248
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1430	-	607
Stage 1	-	-	-	-	877
Stage 2	-	-	-	-	793
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1430	-	605
Mov Cap-2 Maneuver	-	-	-	-	605
Stage 1	-	-	-	-	877
Stage 2	-	-	-	-	791

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.1
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	895	-	-	1430	-
HCM Lane V/C Ratio	0.013	-	-	0.003	-
HCM Control Delay (s)	9.1	-	-	7.5	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th TWSC
5: High Plains Boulevard & Access Drive

Background Traffic Volumes
AM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	8.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	11	105	40	0	0	4
Future Vol, veh/h	11	105	40	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	114	43	0	0	4

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	88	2	4	0	-	0
Stage 1	2	-	-	-	-	-
Stage 2	86	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	913	1082	1618	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	937	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	888	1082	1618	-	-	-
Mov Cap-2 Maneuver	888	-	-	-	-	-
Stage 1	993	-	-	-	-	-
Stage 2	937	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	7.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1618	-	888	1082	-	-
HCM Lane V/C Ratio	0.027	-	0.013	0.105	-	-
HCM Control Delay (s)	7.3	-	9.1	8.7	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	0.4	-	-

HCM 6th TWSC
1: SH 60 & High Plains Boulevard

Background Traffic Volumes
PM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	3.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↑	↗	↘	↗
Traffic Vol, veh/h	207	530	313	57	42	96
Future Vol, veh/h	207	530	313	57	42	96
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	520	-	-	375	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	225	576	340	62	46	104

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	402	0	-	0	1366 340
Stage 1	-	-	-	-	340 -
Stage 2	-	-	-	-	1026 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1157	-	-	-	162 702
Stage 1	-	-	-	-	721 -
Stage 2	-	-	-	-	346 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1157	-	-	-	131 702
Mov Cap-2 Maneuver	-	-	-	-	131 -
Stage 1	-	-	-	-	581 -
Stage 2	-	-	-	-	346 -

Approach	EB	WB	SB
HCM Control Delay, s	2.5	0	21.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1157	-	-	-	131	702
HCM Lane V/C Ratio	0.194	-	-	-	0.348	0.149
HCM Control Delay (s)	8.9	-	-	-	46.5	11
HCM Lane LOS	A	-	-	-	E	B
HCM 95th %tile Q(veh)	0.7	-	-	-	1.4	0.5

HCM 6th TWSC
2: High Plains Boulevard & Brunner Boulevard

Background Traffic Volumes
PM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	1.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	47	1	129	63	1	69
Future Vol, veh/h	47	1	129	63	1	69
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	51	1	140	68	1	75

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	251	174	0	0	208
Stage 1	174	-	-	-	-
Stage 2	77	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	738	869	-	-	1363
Stage 1	856	-	-	-	-
Stage 2	946	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	737	869	-	-	1363
Mov Cap-2 Maneuver	737	-	-	-	-
Stage 1	856	-	-	-	-
Stage 2	945	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	739	1363
HCM Lane V/C Ratio	-	-	0.071	0.001
HCM Control Delay (s)	-	-	10.2	7.6
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.2	0

HCM 6th TWSC
3: E County Road 14 & I-25 Frontage Road

Background Traffic Volumes
PM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	4.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	56	229	163	44	90	114
Future Vol, veh/h	56	229	163	44	90	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	249	177	48	98	124

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	225	0	-	0	572 201
Stage 1	-	-	-	-	201 -
Stage 2	-	-	-	-	371 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1344	-	-	-	482 840
Stage 1	-	-	-	-	833 -
Stage 2	-	-	-	-	698 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1344	-	-	-	456 840
Mov Cap-2 Maneuver	-	-	-	-	456 -
Stage 1	-	-	-	-	789 -
Stage 2	-	-	-	-	698 -

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	14.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1344	-	-	-	612
HCM Lane V/C Ratio	0.045	-	-	-	0.362
HCM Control Delay (s)	7.8	0	-	-	14.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1.6

HCM 6th TWSC
 4: High Plains Boulevard & E County Road 14

Background Traffic Volumes
 PM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔	↔	
Traffic Vol, veh/h	276	0	12	217	0	7
Future Vol, veh/h	276	0	12	217	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	300	0	13	236	0	8

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	300	0	562 300
Stage 1	-	-	-	-	300 -
Stage 2	-	-	-	-	262 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1261	-	488 740
Stage 1	-	-	-	-	752 -
Stage 2	-	-	-	-	782 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1261	-	482 740
Mov Cap-2 Maneuver	-	-	-	-	482 -
Stage 1	-	-	-	-	752 -
Stage 2	-	-	-	-	773 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	9.9
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	740	-	-	1261	-
HCM Lane V/C Ratio	0.01	-	-	0.01	-
HCM Control Delay (s)	9.9	-	-	7.9	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th TWSC
5: High Plains Boulevard & Access Drive

Background Traffic Volumes
PM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	7.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	7	70	130	0	0	12
Future Vol, veh/h	7	70	130	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	76	141	0	0	13

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	289	7	13	0	0
Stage 1	7	-	-	-	-
Stage 2	282	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	702	1075	1606	-	-
Stage 1	1016	-	-	-	-
Stage 2	766	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	640	1075	1606	-	-
Mov Cap-2 Maneuver	640	-	-	-	-
Stage 1	927	-	-	-	-
Stage 2	766	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	7.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1606	-	640	1075	-	-
HCM Lane V/C Ratio	0.088	-	0.012	0.071	-	-
HCM Control Delay (s)	7.5	-	10.7	8.6	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0	0.2	-	-

Timings
1: SH 60 & High Plains Boulevard

Background Traffic Volumes
AM Peak Hour - Year 2042



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	55	330	834	21	46	226
Future Volume (vph)	55	330	834	21	46	226
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.195				0.950	
Satd. Flow (perm)	363	1863	1863	1583	1770	1583
Satd. Flow (RTOR)				23		218
Lane Group Flow (vph)	60	359	907	23	50	246
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	10.0	75.0	65.0	65.0	25.0	25.0
Total Split (%)	10.0%	75.0%	65.0%	65.0%	25.0%	25.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	80.4	79.4	70.3	70.3	9.6	9.6
Actuated g/C Ratio	0.80	0.79	0.70	0.70	0.10	0.10
v/c Ratio	0.16	0.24	0.69	0.02	0.30	0.71
Control Delay	3.5	3.5	14.2	3.0	44.8	19.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.5	3.5	14.2	3.0	44.8	19.9
LOS	A	A	B	A	D	B
Approach Delay		3.5	13.9		24.1	
Approach LOS		A	B		C	
Queue Length 50th (ft)	5	41	299	0	31	17
Queue Length 95th (ft)	18	98	602	10	62	89
Internal Link Dist (ft)		1097	1210		815	
Turn Bay Length (ft)	520			375		
Base Capacity (vph)	379	1480	1309	1119	354	491
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.16	0.24	0.69	0.02	0.14	0.50

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated

Timings

1: SH 60 & High Plains Boulevard

Background Traffic Volumes

AM Peak Hour - Year 2042

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 13.1

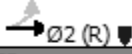


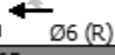
Intersection LOS: B

Intersection Capacity Utilization 67.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 1: SH 60 & High Plains Boulevard

 Ø2 (R)	 Ø4
75 s	25 s
 Ø5	 Ø6 (R)
10 s 65 s	

HCM 6th TWSC
2: High Plains Boulevard & Brunner Boulevard

Background Traffic Volumes
AM Peak Hour - Year 2042

Intersection						
Int Delay, s/veh	3.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	T		T		T	
Traffic Vol, veh/h	86	0	41	45	0	105
Future Vol, veh/h	86	0	41	45	0	105
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	0	45	49	0	114

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	184	70	0	0	94
Stage 1	70	-	-	-	-
Stage 2	114	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	805	993	-	-	1500
Stage 1	953	-	-	-	-
Stage 2	911	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	805	993	-	-	1500
Mov Cap-2 Maneuver	805	-	-	-	-
Stage 1	953	-	-	-	-
Stage 2	911	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.1	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	805	1500
HCM Lane V/C Ratio	-	-	0.116	-
HCM Control Delay (s)	-	-	10.1	0
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0

HCM 6th TWSC
3: E County Road 14 & I-25 Frontage Road

Background Traffic Volumes
AM Peak Hour - Year 2042

Intersection						
Int Delay, s/veh	3.7					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	48	127	241	47	77	60
Future Vol, veh/h	48	127	241	47	77	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	138	262	51	84	65

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	313	0	-	0	530 288
Stage 1	-	-	-	-	288 -
Stage 2	-	-	-	-	242 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1247	-	-	-	510 751
Stage 1	-	-	-	-	761 -
Stage 2	-	-	-	-	798 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1247	-	-	-	487 751
Mov Cap-2 Maneuver	-	-	-	-	487 -
Stage 1	-	-	-	-	727 -
Stage 2	-	-	-	-	798 -

Approach	EB	WB	SB
HCM Control Delay, s	2.2	0	13.4
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1247	-	-	-	576
HCM Lane V/C Ratio	0.042	-	-	-	0.259
HCM Control Delay (s)	8	0	-	-	13.4
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	1

HCM 6th TWSC
4: High Plains Boulevard & E County Road 14

Background Traffic Volumes
AM Peak Hour - Year 2042

Intersection						
Int Delay, s/veh	0.3					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Traffic Vol, veh/h	199	0	4	297	0	11
Future Vol, veh/h	199	0	4	297	0	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	216	0	4	323	0	12

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	216	0	547
Stage 1	-	-	-	-	216
Stage 2	-	-	-	-	331
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1354	-	498
Stage 1	-	-	-	-	820
Stage 2	-	-	-	-	728
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1354	-	496
Mov Cap-2 Maneuver	-	-	-	-	496
Stage 1	-	-	-	-	820
Stage 2	-	-	-	-	725

Approach	EB	WB	NB
HCM Control Delay, s	0	0.1	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	824	-	-	1354	-
HCM Lane V/C Ratio	0.015	-	-	0.003	-
HCM Control Delay (s)	9.4	-	-	7.7	0
HCM Lane LOS	A	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th TWSC
5: High Plains Boulevard & Access Drive

Background Traffic Volumes
AM Peak Hour - Year 2042

Intersection						
Int Delay, s/veh	8.1					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	11	105	41	0	0	4
Future Vol, veh/h	11	105	41	0	0	4
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	114	45	0	0	4

Major/Minor	Minor2	Major1	Major2			
Conflicting Flow All	92	2	4	0	-	0
Stage 1	2	-	-	-	-	-
Stage 2	90	-	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-	-
Pot Cap-1 Maneuver	908	1082	1618	-	-	-
Stage 1	1021	-	-	-	-	-
Stage 2	934	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	883	1082	1618	-	-	-
Mov Cap-2 Maneuver	883	-	-	-	-	-
Stage 1	992	-	-	-	-	-
Stage 2	934	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.7	7.3	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1618	-	883	1082	-	-
HCM Lane V/C Ratio	0.028	-	0.014	0.105	-	-
HCM Control Delay (s)	7.3	-	9.1	8.7	-	-
HCM Lane LOS	A	-	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	0	0.4	-	-

Timings
1: SH 60 & High Plains Boulevard

Background Traffic Volumes
 PM Peak Hour - Year 2042



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	251	765	452	74	56	114
Future Volume (vph)	251	765	452	74	56	114
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.420				0.950	
Satd. Flow (perm)	782	1863	1863	1583	1770	1583
Satd. Flow (RTOR)				80		124
Lane Group Flow (vph)	273	832	491	80	61	124
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	20.0	90.0	70.0	70.0	30.0	30.0
Total Split (%)	16.7%	75.0%	58.3%	58.3%	25.0%	25.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	C-Max	C-Max	None	None
Act Effct Green (s)	100.5	99.5	85.3	85.3	9.5	9.5
Actuated g/C Ratio	0.84	0.83	0.71	0.71	0.08	0.08
v/c Ratio	0.37	0.54	0.37	0.07	0.44	0.52
Control Delay	3.6	4.9	8.4	1.7	61.5	16.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	3.6	4.9	8.4	1.7	61.5	16.8
LOS	A	A	A	A	E	B
Approach Delay		4.6	7.4		31.5	
Approach LOS		A	A		C	
Queue Length 50th (ft)	30	152	132	0	46	0
Queue Length 95th (ft)	58	263	228	17	89	57
Internal Link Dist (ft)		1097	1210		815	
Turn Bay Length (ft)	520			375		
Base Capacity (vph)	778	1544	1323	1147	368	427
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.35	0.54	0.37	0.07	0.17	0.29

Intersection Summary

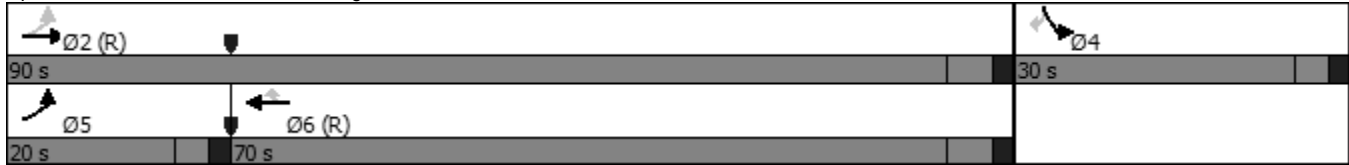
Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBT, Start of Green
 Natural Cycle: 60
 Control Type: Actuated-Coordinated

Timings
1: SH 60 & High Plains Boulevard

Background Traffic Volumes
 PM Peak Hour - Year 2042

Maximum v/c Ratio: 0.54	
Intersection Signal Delay: 8.1	Intersection LOS: A
Intersection Capacity Utilization 55.2%	ICU Level of Service B
Analysis Period (min) 15	

Splits and Phases: 1: SH 60 & High Plains Boulevard



HCM 6th TWSC
2: High Plains Boulevard & Brunner Boulevard

Background Traffic Volumes
PM Peak Hour - Year 2042

Intersection						
Int Delay, s/veh	2.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	68	2	129	92	2	68
Future Vol, veh/h	68	2	129	92	2	68
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	74	2	140	100	2	74

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	268	190	0	0	240
Stage 1	190	-	-	-	-
Stage 2	78	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	721	852	-	-	1327
Stage 1	842	-	-	-	-
Stage 2	945	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	720	852	-	-	1327
Mov Cap-2 Maneuver	720	-	-	-	-
Stage 1	842	-	-	-	-
Stage 2	943	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.6	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	723	1327
HCM Lane V/C Ratio	-	-	0.105	0.002
HCM Control Delay (s)	-	-	10.6	7.7
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.4	0

HCM 6th TWSC
3: E County Road 14 & I-25 Frontage Road

Background Traffic Volumes
PM Peak Hour - Year 2042

Intersection						
Int Delay, s/veh	8.4					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	81	314	226	62	126	165
Future Vol, veh/h	81	314	226	62	126	165
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	341	246	67	137	179

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	313	0	-	0	797 280
Stage 1	-	-	-	-	280 -
Stage 2	-	-	-	-	517 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1247	-	-	-	356 759
Stage 1	-	-	-	-	767 -
Stage 2	-	-	-	-	598 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1247	-	-	-	325 759
Mov Cap-2 Maneuver	-	-	-	-	325 -
Stage 1	-	-	-	-	700 -
Stage 2	-	-	-	-	598 -

Approach	EB	WB	SB
HCM Control Delay, s	1.7	0	25.7
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1247	-	-	-	481
HCM Lane V/C Ratio	0.071	-	-	-	0.658
HCM Control Delay (s)	8.1	0	-	-	25.7
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	4.7

HCM 6th TWSC
4: High Plains Boulevard & E County Road 14

Background Traffic Volumes
PM Peak Hour - Year 2042

Intersection						
Int Delay, s/veh	0.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Traffic Vol, veh/h	398	0	12	300	0	7
Future Vol, veh/h	398	0	12	300	0	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	433	0	13	326	0	8

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	433	0	785
Stage 1	-	-	-	-	433
Stage 2	-	-	-	-	352
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1127	-	361
Stage 1	-	-	-	-	654
Stage 2	-	-	-	-	712
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1127	-	356
Mov Cap-2 Maneuver	-	-	-	-	356
Stage 1	-	-	-	-	654
Stage 2	-	-	-	-	702

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	10.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	623	-	-	1127	-
HCM Lane V/C Ratio	0.012	-	-	0.012	-
HCM Control Delay (s)	10.9	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0	-	-	0	-

HCM 6th TWSC
5: High Plains Boulevard & Access Drive

Background Traffic Volumes
PM Peak Hour - Year 2042

Intersection						
Int Delay, s/veh	7.5					
Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations	↙	↗	↙	↑	↗	
Traffic Vol, veh/h	7	70	131	0	0	12
Future Vol, veh/h	7	70	131	0	0	12
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	150	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	8	76	142	0	0	13

Major/Minor	Minor2	Major1		Major2	
Conflicting Flow All	291	7	13	0	0
Stage 1	7	-	-	-	-
Stage 2	284	-	-	-	-
Critical Hdwy	6.42	6.22	4.12	-	-
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	2.218	-	-
Pot Cap-1 Maneuver	700	1075	1606	-	-
Stage 1	1016	-	-	-	-
Stage 2	764	-	-	-	-
Platoon blocked, %				-	-
Mov Cap-1 Maneuver	638	1075	1606	-	-
Mov Cap-2 Maneuver	638	-	-	-	-
Stage 1	927	-	-	-	-
Stage 2	764	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	8.8	7.5	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	EBLn2	SBT	SBR
Capacity (veh/h)	1606	-	638	1075	-	-
HCM Lane V/C Ratio	0.089	-	0.012	0.071	-	-
HCM Control Delay (s)	7.5	-	10.7	8.6	-	-
HCM Lane LOS	A	-	B	A	-	-
HCM 95th %tile Q(veh)	0.3	-	0	0.2	-	-

HCM 6th TWSC
1: SH 60 & High Plains Boulevard

Total Traffic Volumes
AM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	10.3					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↑	↗	↘	↗
Traffic Vol, veh/h	100	229	578	26	64	336
Future Vol, veh/h	100	229	578	26	64	336
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	520	-	-	375	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	109	249	628	28	70	365




Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	656	0	-	0	1095 628
Stage 1	-	-	-	-	628 -
Stage 2	-	-	-	-	467 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	931	-	-	-	236 483
Stage 1	-	-	-	-	532 -
Stage 2	-	-	-	-	631 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	931	-	-	-	208 483
Mov Cap-2 Maneuver	-	-	-	-	208 -
Stage 1	-	-	-	-	470 -
Stage 2	-	-	-	-	631 -

Approach	EB	WB	SB
HCM Control Delay, s	2.9	0	31.9
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	931	-	-	-	208	483
HCM Lane V/C Ratio	0.117	-	-	-	0.334	0.756
HCM Control Delay (s)	9.4	-	-	-	30.8	32.1
HCM Lane LOS	A	-	-	-	D	D
HCM 95th %tile Q(veh)	0.4	-	-	-	1.4	6.5

HCM 6th TWSC
2: High Plains Boulevard & Brunner Boulevard

Total Traffic Volumes
AM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	2.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	86	0	92	41	0	257
Future Vol, veh/h	86	0	92	41	0	257
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	0	100	45	0	279

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	402	123	0	0	145
Stage 1	123	-	-	-	-
Stage 2	279	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	604	928	-	-	1437
Stage 1	902	-	-	-	-
Stage 2	768	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	604	928	-	-	1437
Mov Cap-2 Maneuver	604	-	-	-	-
Stage 1	902	-	-	-	-
Stage 2	768	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	604	1437
HCM Lane V/C Ratio	-	-	0.155	-
HCM Control Delay (s)	-	-	12	0
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0

HCM 6th TWSC
 3: E County Road 14 & I-25 Frontage Road

Total Traffic Volumes
 AM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	2.8					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	33	110	232	49	58	42
Future Vol, veh/h	33	110	232	49	58	42
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	120	252	53	63	46

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	305	0	-	0	471 279
Stage 1	-	-	-	-	279 -
Stage 2	-	-	-	-	192 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1256	-	-	-	551 760
Stage 1	-	-	-	-	768 -
Stage 2	-	-	-	-	841 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1256	-	-	-	534 760
Mov Cap-2 Maneuver	-	-	-	-	534 -
Stage 1	-	-	-	-	744 -
Stage 2	-	-	-	-	841 -

Approach	EB	WB	SB
HCM Control Delay, s	1.8	0	12.2
HCM LOS			B

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1256	-	-	-	610
HCM Lane V/C Ratio	0.029	-	-	-	0.178
HCM Control Delay (s)	8	0	-	-	12.2
HCM Lane LOS	A	A	-	-	B
HCM 95th %tile Q(veh)	0.1	-	-	-	0.6

HCM 6th TWSC
4: High Plains Boulevard & E County Road 14

Total Traffic Volumes
AM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Traffic Vol, veh/h	153	9	32	262	28	20
Future Vol, veh/h	153	9	32	262	28	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	166	10	35	285	30	22

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	176	0	526
Stage 1	-	-	-	-	171
Stage 2	-	-	-	-	355
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1400	-	512
Stage 1	-	-	-	-	859
Stage 2	-	-	-	-	710
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1400	-	497
Mov Cap-2 Maneuver	-	-	-	-	497
Stage 1	-	-	-	-	859
Stage 2	-	-	-	-	689

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	11.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	606	-	-	1400	-
HCM Lane V/C Ratio	0.086	-	-	0.025	-
HCM Control Delay (s)	11.5	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

HCM 6th TWSC
5: High Plains Boulevard & Access A

Total Traffic Volumes
AM Peak Hour - Year 2024

Intersection												
Int Delay, s/veh	7.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↖	↕	↗		↕	
Traffic Vol, veh/h	11	0	105	124	0	28	40	9	43	9	28	4
Future Vol, veh/h	11	0	105	124	0	28	40	9	43	9	28	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	200	-	-	200	150	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	0	114	135	0	30	43	10	47	10	30	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	187	195	32	205	150	10	34	0	0	57	0	0
Stage 1	52	52	-	96	96	-	-	-	-	-	-	-
Stage 2	135	143	-	109	54	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	774	700	1042	753	742	1071	1578	-	-	1547	-	-
Stage 1	961	852	-	911	815	-	-	-	-	-	-	-
Stage 2	868	779	-	896	850	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	732	676	1042	653	717	1071	1578	-	-	1547	-	-
Mov Cap-2 Maneuver	732	676	-	653	717	-	-	-	-	-	-	-
Stage 1	935	846	-	886	793	-	-	-	-	-	-	-
Stage 2	820	758	-	792	844	-	-	-	-	-	-	-

Approach	EB		WB		NB		SB	
HCM Control Delay, s	9		11.3		3.2		1.6	
HCM LOS	A		B					

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1578	-	-	732	1042	653	1071	1547	-	-
HCM Lane V/C Ratio	0.028	-	-	0.016	0.11	0.206	0.028	0.006	-	-
HCM Control Delay (s)	7.3	-	-	10	8.9	11.9	8.5	7.3	0	-
HCM Lane LOS	A	-	-	B	A	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.4	0.8	0.1	0	-	-

HCM 6th TWSC
6: Access B & E County Road 14

Total Traffic Volumes
AM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	2.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Traffic Vol, veh/h	150	23	10	225	69	28
Future Vol, veh/h	150	23	10	225	69	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	163	25	11	245	75	30

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	188	0	443
Stage 1	-	-	-	-	176
Stage 2	-	-	-	-	267
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1386	-	572
Stage 1	-	-	-	-	855
Stage 2	-	-	-	-	778
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1386	-	567
Mov Cap-2 Maneuver	-	-	-	-	567
Stage 1	-	-	-	-	855
Stage 2	-	-	-	-	771

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	11.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	630	-	-	1386	-
HCM Lane V/C Ratio	0.167	-	-	0.008	-
HCM Control Delay (s)	11.9	-	-	7.6	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.6	-	-	0	-

HCM 6th TWSC
1: SH 60 & High Plains Boulevard

Total Traffic Volumes
PM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	13.9					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↘	↑	↑	↗	↘	↗
Traffic Vol, veh/h	378	530	313	88	61	196
Future Vol, veh/h	378	530	313	88	61	196
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	520	-	-	375	0	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	411	576	340	96	66	213

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	436	0	-	0	1738 340
Stage 1	-	-	-	-	340 -
Stage 2	-	-	-	-	1398 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1124	-	-	-	96 702
Stage 1	-	-	-	-	721 -
Stage 2	-	-	-	-	229 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1124	-	-	-	~ 61 702
Mov Cap-2 Maneuver	-	-	-	-	~ 61 -
Stage 1	-	-	-	-	457 -
Stage 2	-	-	-	-	229 -

Approach	EB	WB	SB
HCM Control Delay, s	4.2	0	69.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	SBLn2
Capacity (veh/h)	1124	-	-	-	61	702
HCM Lane V/C Ratio	0.366	-	-	-	1.087	0.303
HCM Control Delay (s)	10	-	-	-	254.6	12.3
HCM Lane LOS	B	-	-	-	F	B
HCM 95th %tile Q(veh)	1.7	-	-	-	5.3	1.3

Notes
 -: Volume exceeds capacity \$: Delay exceeds 300s +: Computation Not Defined *: All major volume in platoon

HCM 6th TWSC
2: High Plains Boulevard & Brunner Boulevard

Total Traffic Volumes
PM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	1.4					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	65	1	300	94	1	170
Future Vol, veh/h	65	1	300	94	1	170
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	71	1	326	102	1	185

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	564	377	0	0	428
Stage 1	377	-	-	-	-
Stage 2	187	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	487	670	-	-	1131
Stage 1	694	-	-	-	-
Stage 2	845	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	487	670	-	-	1131
Mov Cap-2 Maneuver	487	-	-	-	-
Stage 1	694	-	-	-	-
Stage 2	844	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	13.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	489	1131
HCM Lane V/C Ratio	-	-	0.147	0.001
HCM Control Delay (s)	-	-	13.6	8.2
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.5	0

HCM 6th TWSC
 3: E County Road 14 & I-25 Frontage Road

Total Traffic Volumes
 PM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	5.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	56	291	199	53	105	114
Future Vol, veh/h	56	291	199	53	105	114
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	61	316	216	58	114	124

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	274	0	-	0	683
Stage 1	-	-	-	-	245
Stage 2	-	-	-	-	438
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1289	-	-	-	415
Stage 1	-	-	-	-	796
Stage 2	-	-	-	-	651
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1289	-	-	-	391
Mov Cap-2 Maneuver	-	-	-	-	391
Stage 1	-	-	-	-	751
Stage 2	-	-	-	-	651

Approach	EB	WB	SB
HCM Control Delay, s	1.3	0	17.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1289	-	-	-	531
HCM Lane V/C Ratio	0.047	-	-	-	0.448
HCM Control Delay (s)	7.9	0	-	-	17.2
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	2.3

HCM 6th TWSC
4: High Plains Boulevard & E County Road 14

Total Traffic Volumes
PM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	323	30	31	244	18	38
Future Vol, veh/h	323	30	31	244	18	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	351	33	34	265	20	41

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	384	0	701 368
Stage 1	-	-	-	-	368 -
Stage 2	-	-	-	-	333 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1174	-	405 677
Stage 1	-	-	-	-	700 -
Stage 2	-	-	-	-	726 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1174	-	391 677
Mov Cap-2 Maneuver	-	-	-	-	391 -
Stage 1	-	-	-	-	700 -
Stage 2	-	-	-	-	701 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	12.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	548	-	-	1174	-
HCM Lane V/C Ratio	0.111	-	-	0.029	-
HCM Control Delay (s)	12.4	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-

HCM 6th TWSC
5: High Plains Boulevard & Access A

Total Traffic Volumes
PM Peak Hour - Year 2024

Intersection												
Int Delay, s/veh	6.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↖	↖	↗		↕	
Traffic Vol, veh/h	7	0	70	82	0	18	130	31	140	30	19	12
Future Vol, veh/h	7	0	70	82	0	18	130	31	140	30	19	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	200	-	-	200	150	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	76	89	0	20	141	34	152	33	21	13

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	496	562	28	448	416	34	34	0	0	186	0	0
Stage 1	94	94	-	316	316	-	-	-	-	-	-	-
Stage 2	402	468	-	132	100	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	484	436	1047	521	527	1039	1578	-	-	1388	-	-
Stage 1	913	817	-	695	655	-	-	-	-	-	-	-
Stage 2	625	561	-	871	812	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	435	388	1047	442	469	1039	1578	-	-	1388	-	-
Mov Cap-2 Maneuver	435	388	-	442	469	-	-	-	-	-	-	-
Stage 1	832	797	-	633	597	-	-	-	-	-	-	-
Stage 2	558	511	-	788	793	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	14	3.2	3.8
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1578	-	-	435	1047	442	1039	1388	-	-
HCM Lane V/C Ratio	0.09	-	-	0.017	0.073	0.202	0.019	0.023	-	-
HCM Control Delay (s)	7.5	-	-	13.4	8.7	15.2	8.5	7.7	0	-
HCM Lane LOS	A	-	-	B	A	C	A	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	0.2	0.7	0.1	0.1	-	-

HCM 6th TWSC
6: Access B & E County Road 14

Total Traffic Volumes
PM Peak Hour - Year 2024

Intersection						
Int Delay, s/veh	1.7					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Traffic Vol, veh/h	283	78	31	229	46	18
Future Vol, veh/h	283	78	31	229	46	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	308	85	34	249	50	20

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	393	0	668 351
Stage 1	-	-	-	-	351 -
Stage 2	-	-	-	-	317 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1166	-	423 692
Stage 1	-	-	-	-	713 -
Stage 2	-	-	-	-	738 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1166	-	409 692
Mov Cap-2 Maneuver	-	-	-	-	409 -
Stage 1	-	-	-	-	713 -
Stage 2	-	-	-	-	713 -

Approach	EB	WB	NB
HCM Control Delay, s	0	1	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	462	-	-	1166	-
HCM Lane V/C Ratio	0.151	-	-	0.029	-
HCM Control Delay (s)	14.2	-	-	8.2	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

Timings
1: SH 60 & High Plains Boulevard

Total Traffic Volumes
AM Peak Hour - Year 2042



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	107	330	834	31	73	378
Future Volume (vph)	107	330	834	31	73	378
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.140				0.950	
Satd. Flow (perm)	261	1863	1863	1583	1770	1583
Satd. Flow (RTOR)				34		218
Lane Group Flow (vph)	116	359	907	34	79	411
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	10.0	75.0	65.0	65.0	25.0	25.0
Total Split (%)	10.0%	75.0%	65.0%	65.0%	25.0%	25.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	Max	Max	None	None
Act Effct Green (s)	72.9	71.9	61.4	61.4	17.1	17.1
Actuated g/C Ratio	0.73	0.72	0.61	0.61	0.17	0.17
v/c Ratio	0.42	0.27	0.79	0.03	0.26	0.91
Control Delay	9.4	6.0	22.0	3.1	36.8	44.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	9.4	6.0	22.0	3.1	36.8	44.0
LOS	A	A	C	A	D	D
Approach Delay		6.8	21.3		42.9	
Approach LOS		A	C		D	
Queue Length 50th (ft)	21	77	430	0	43	122
Queue Length 95th (ft)	38	116	630	12	84	#287
Internal Link Dist (ft)		1097	1210		815	
Turn Bay Length (ft)	520			375		
Base Capacity (vph)	273	1338	1143	984	354	491
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.27	0.79	0.03	0.22	0.84

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 80
 Control Type: Actuated-Coordinated

HCM 6th TWSC
2: High Plains Boulevard & Brunner Boulevard

Total Traffic Volumes
AM Peak Hour - Year 2042

Intersection						
Int Delay, s/veh	2.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations	Y		T			T
Traffic Vol, veh/h	113	0	93	55	0	257
Future Vol, veh/h	113	0	93	55	0	257
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	123	0	101	60	0	279

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	410	131	0	0	161
Stage 1	131	-	-	-	-
Stage 2	279	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	598	919	-	-	1418
Stage 1	895	-	-	-	-
Stage 2	768	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	598	919	-	-	1418
Mov Cap-2 Maneuver	598	-	-	-	-
Stage 1	895	-	-	-	-
Stage 2	768	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	12.6	0	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	598	1418
HCM Lane V/C Ratio	-	-	0.205	-
HCM Control Delay (s)	-	-	12.6	0
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.8	0

HCM 6th TWSC
3: E County Road 14 & I-25 Frontage Road

Total Traffic Volumes
AM Peak Hour - Year 2042

Intersection						
Int Delay, s/veh	3.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	48	146	296	61	81	60
Future Vol, veh/h	48	146	296	61	81	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	52	159	322	66	88	65

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	388	0	-	0	618 355
Stage 1	-	-	-	-	355 -
Stage 2	-	-	-	-	263 -
Critical Hdwy	4.12	-	-	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	2.218	-	-	-	3.518 3.318
Pot Cap-1 Maneuver	1170	-	-	-	453 689
Stage 1	-	-	-	-	710 -
Stage 2	-	-	-	-	781 -
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1170	-	-	-	431 689
Mov Cap-2 Maneuver	-	-	-	-	431 -
Stage 1	-	-	-	-	675 -
Stage 2	-	-	-	-	781 -

Approach	EB	WB	SB
HCM Control Delay, s	2	0	15
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1170	-	-	-	513
HCM Lane V/C Ratio	0.045	-	-	-	0.299
HCM Control Delay (s)	8.2	0	-	-	15
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.1	-	-	-	1.2

HCM 6th TWSC
4: High Plains Boulevard & E County Road 14

Total Traffic Volumes
AM Peak Hour - Year 2042

Intersection						
Int Delay, s/veh	1.4					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Traffic Vol, veh/h	213	9	32	338	28	20
Future Vol, veh/h	213	9	32	338	28	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	232	10	35	367	30	22

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	242	0	674
Stage 1	-	-	-	-	237
Stage 2	-	-	-	-	437
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1324	-	420
Stage 1	-	-	-	-	802
Stage 2	-	-	-	-	651
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1324	-	406
Mov Cap-2 Maneuver	-	-	-	-	406
Stage 1	-	-	-	-	802
Stage 2	-	-	-	-	630

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	12.8
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	511	-	-	1324	-
HCM Lane V/C Ratio	0.102	-	-	0.026	-
HCM Control Delay (s)	12.8	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-

HCM 6th TWSC
5: High Plains Boulevard & Access A

Total Traffic Volumes
AM Peak Hour - Year 2042

Intersection												
Int Delay, s/veh	7.8											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↖	↖	↗		↕	
Traffic Vol, veh/h	11	0	105	124	0	28	41	9	43	9	28	4
Future Vol, veh/h	11	0	105	124	0	28	41	9	43	9	28	4
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	200	-	-	200	150	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	0	114	135	0	30	45	10	47	10	30	4

Major/Minor	Minor2		Minor1		Major1			Major2				
Conflicting Flow All	191	199	32	209	154	10	34	0	0	57	0	0
Stage 1	52	52	-	100	100	-	-	-	-	-	-	-
Stage 2	139	147	-	109	54	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	769	697	1042	748	738	1071	1578	-	-	1547	-	-
Stage 1	961	852	-	906	812	-	-	-	-	-	-	-
Stage 2	864	775	-	896	850	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	727	672	1042	648	711	1071	1578	-	-	1547	-	-
Mov Cap-2 Maneuver	727	672	-	648	711	-	-	-	-	-	-	-
Stage 1	933	846	-	880	788	-	-	-	-	-	-	-
Stage 2	816	753	-	792	844	-	-	-	-	-	-	-

Approach	EB		WB		NB			SB		
HCM Control Delay, s	9		11.4		3.2			1.6		
HCM LOS	A		B							

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1578	-	-	727	1042	648	1071	1547	-	-
HCM Lane V/C Ratio	0.028	-	-	0.016	0.11	0.208	0.028	0.006	-	-
HCM Control Delay (s)	7.3	-	-	10	8.9	12	8.5	7.3	0	-
HCM Lane LOS	A	-	-	B	A	B	A	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.1	0.4	0.8	0.1	0	-	-

HCM 6th TWSC
6: Access B & E County Road 14

Total Traffic Volumes
AM Peak Hour - Year 2042

Intersection						
Int Delay, s/veh	2.1					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Traffic Vol, veh/h	210	23	10	301	69	28
Future Vol, veh/h	210	23	10	301	69	28
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	228	25	11	327	75	30

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	253	0	590 241
Stage 1	-	-	-	-	241 -
Stage 2	-	-	-	-	349 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1312	-	470 798
Stage 1	-	-	-	-	799 -
Stage 2	-	-	-	-	714 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1312	-	465 798
Mov Cap-2 Maneuver	-	-	-	-	465 -
Stage 1	-	-	-	-	799 -
Stage 2	-	-	-	-	707 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	13.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	529	-	-	1312	-
HCM Lane V/C Ratio	0.199	-	-	0.008	-
HCM Control Delay (s)	13.5	-	-	7.8	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0	-

Timings
1: SH 60 & High Plains Boulevard

Total Traffic Volumes
PM Peak Hour - Year 2042



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	422	765	452	105	75	214
Future Volume (vph)	422	765	452	105	75	214
Satd. Flow (prot)	1770	1863	1863	1583	1770	1583
Flt Permitted	0.403				0.950	
Satd. Flow (perm)	751	1863	1863	1583	1770	1583
Satd. Flow (RTOR)				114		233
Lane Group Flow (vph)	459	832	491	114	82	233
Turn Type	pm+pt	NA	NA	Perm	Prot	Perm
Protected Phases	5	2	6		4	
Permitted Phases	2			6		4
Detector Phase	5	2	6	6	4	4
Switch Phase						
Minimum Initial (s)	5.0	5.0	5.0	5.0	5.0	5.0
Minimum Split (s)	10.0	25.0	25.0	25.0	25.0	25.0
Total Split (s)	20.0	90.0	70.0	70.0	30.0	30.0
Total Split (%)	16.7%	75.0%	58.3%	58.3%	25.0%	25.0%
Yellow Time (s)	3.0	4.0	4.0	4.0	3.0	3.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	5.0	6.0	6.0	6.0	5.0	5.0
Lead/Lag	Lead		Lag	Lag		
Lead-Lag Optimize?	Yes		Yes	Yes		
Recall Mode	None	C-Max	Max	Max	None	None
Act Effct Green (s)	99.1	98.1	79.6	79.6	10.9	10.9
Actuated g/C Ratio	0.83	0.82	0.66	0.66	0.09	0.09
v/c Ratio	0.63	0.55	0.40	0.10	0.51	0.66
Control Delay	6.8	5.5	11.5	2.1	62.4	15.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.8	5.5	11.5	2.1	62.4	15.6
LOS	A	A	B	A	E	B
Approach Delay		6.0	9.7		27.8	
Approach LOS		A	A		C	
Queue Length 50th (ft)	64	166	158	0	62	0
Queue Length 95th (ft)	118	293	285	24	111	75
Internal Link Dist (ft)		1097	1210		815	
Turn Bay Length (ft)	520			375		
Base Capacity (vph)	754	1523	1236	1088	368	514
Starvation Cap Reductn	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.61	0.55	0.40	0.10	0.22	0.45

Intersection Summary

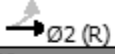



Cycle Length: 120
 Actuated Cycle Length: 120
 Offset: 0 (0%), Referenced to phase 2:EBTL, Start of Green
 Natural Cycle: 75
 Control Type: Actuated-Coordinated

Timings
1: SH 60 & High Plains Boulevard

Total Traffic Volumes
 PM Peak Hour - Year 2042

Maximum v/c Ratio: 0.66	
Intersection Signal Delay: 10.1	Intersection LOS: B
Intersection Capacity Utilization 64.7%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 1: SH 60 & High Plains Boulevard

 Ø2 (R)		 Ø4	
90 s		30 s	
 Ø5	 Ø6		
20 s	70 s		

HCM 6th TWSC
 2: High Plains Boulevard & Brunner Boulevard

Total Traffic Volumes
 PM Peak Hour - Year 2042

Intersection						
Int Delay, s/veh	1.9					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	86	2	300	123	2	169
Future Vol, veh/h	86	2	300	123	2	169
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	93	2	326	134	2	184

Major/Minor	Minor1	Major1	Major2		
Conflicting Flow All	581	393	0	0	460
Stage 1	393	-	-	-	-
Stage 2	188	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218
Pot Cap-1 Maneuver	476	656	-	-	1101
Stage 1	682	-	-	-	-
Stage 2	844	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	475	656	-	-	1101
Mov Cap-2 Maneuver	475	-	-	-	-
Stage 1	682	-	-	-	-
Stage 2	842	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	14.4	0	0.1
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	478	1101
HCM Lane V/C Ratio	-	-	0.2	0.002
HCM Control Delay (s)	-	-	14.4	8.3
HCM Lane LOS	-	-	B	A
HCM 95th %tile Q(veh)	-	-	0.7	0

HCM 6th TWSC
 3: E County Road 14 & I-25 Frontage Road

Total Traffic Volumes
 PM Peak Hour - Year 2042

Intersection						
Int Delay, s/veh	12.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↕	↕		↕	
Traffic Vol, veh/h	81	376	262	71	141	165
Future Vol, veh/h	81	376	262	71	141	165
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	88	409	285	77	153	179

Major/Minor	Major1	Major2	Minor2		
Conflicting Flow All	362	0	-	0	909
Stage 1	-	-	-	-	324
Stage 2	-	-	-	-	585
Critical Hdwy	4.12	-	-	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	2.218	-	-	-	3.518
Pot Cap-1 Maneuver	1197	-	-	-	305
Stage 1	-	-	-	-	733
Stage 2	-	-	-	-	557
Platoon blocked, %		-	-	-	
Mov Cap-1 Maneuver	1197	-	-	-	276
Mov Cap-2 Maneuver	-	-	-	-	276
Stage 1	-	-	-	-	663
Stage 2	-	-	-	-	557

Approach	EB	WB	SB
HCM Control Delay, s	1.5	0	41.2
HCM LOS			E

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	1197	-	-	-	413
HCM Lane V/C Ratio	0.074	-	-	-	0.805
HCM Control Delay (s)	8.2	0	-	-	41.2
HCM Lane LOS	A	A	-	-	E
HCM 95th %tile Q(veh)	0.2	-	-	-	7.2

HCM 6th TWSC
4: High Plains Boulevard & E County Road 14

Total Traffic Volumes
PM Peak Hour - Year 2042

Intersection						
Int Delay, s/veh	1.2					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Traffic Vol, veh/h	445	30	31	327	18	38
Future Vol, veh/h	445	30	31	327	18	38
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	484	33	34	355	20	41

Major/Minor	Major1	Major2	Minor1		
Conflicting Flow All	0	0	517	0	924 501
Stage 1	-	-	-	-	501 -
Stage 2	-	-	-	-	423 -
Critical Hdwy	-	-	4.12	-	6.42 6.22
Critical Hdwy Stg 1	-	-	-	-	5.42 -
Critical Hdwy Stg 2	-	-	-	-	5.42 -
Follow-up Hdwy	-	-	2.218	-	3.518 3.318
Pot Cap-1 Maneuver	-	-	1049	-	299 570
Stage 1	-	-	-	-	609 -
Stage 2	-	-	-	-	661 -
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1049	-	287 570
Mov Cap-2 Maneuver	-	-	-	-	287 -
Stage 1	-	-	-	-	609 -
Stage 2	-	-	-	-	635 -

Approach	EB	WB	NB
HCM Control Delay, s	0	0.7	14.7
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	433	-	-	1049	-
HCM Lane V/C Ratio	0.141	-	-	0.032	-
HCM Control Delay (s)	14.7	-	-	8.5	0
HCM Lane LOS	B	-	-	A	A
HCM 95th %tile Q(veh)	0.5	-	-	0.1	-

HCM 6th TWSC
5: High Plains Boulevard & Access A

Total Traffic Volumes
PM Peak Hour - Year 2042

Intersection												
Int Delay, s/veh	6.2											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕	↗		↕	↗	↖	↕	↗		↕	
Traffic Vol, veh/h	7	0	70	82	0	18	131	31	140	30	19	12
Future Vol, veh/h	7	0	70	82	0	18	131	31	140	30	19	12
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	200	-	-	200	150	-	150	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	8	0	76	89	0	20	142	34	152	33	21	13

Major/Minor	Minor2		Minor1		Major1		Major2					
Conflicting Flow All	498	564	28	450	418	34	34	0	0	186	0	0
Stage 1	94	94	-	318	318	-	-	-	-	-	-	-
Stage 2	404	470	-	132	100	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	483	435	1047	519	526	1039	1578	-	-	1388	-	-
Stage 1	913	817	-	693	654	-	-	-	-	-	-	-
Stage 2	623	560	-	871	812	-	-	-	-	-	-	-
Platoon blocked, %								-	-	-	-	-
Mov Cap-1 Maneuver	433	386	1047	440	467	1039	1578	-	-	1388	-	-
Mov Cap-2 Maneuver	433	386	-	440	467	-	-	-	-	-	-	-
Stage 1	831	797	-	631	595	-	-	-	-	-	-	-
Stage 2	556	510	-	788	793	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	9.1	14	3.3	3.8
HCM LOS	A	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	EBLn2	WBLn1	WBLn2	SBL	SBT	SBR
Capacity (veh/h)	1578	-	-	433	1047	440	1039	1388	-	-
HCM Lane V/C Ratio	0.09	-	-	0.018	0.073	0.203	0.019	0.023	-	-
HCM Control Delay (s)	7.5	-	-	13.5	8.7	15.2	8.5	7.7	0	-
HCM Lane LOS	A	-	-	B	A	C	A	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	0.2	0.7	0.1	0.1	-	-

HCM 6th TWSC
6: Access B & E County Road 14

Total Traffic Volumes
PM Peak Hour - Year 2042

Intersection						
Int Delay, s/veh	1.6					
Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↔			↔		↔
Traffic Vol, veh/h	405	78	31	312	46	18
Future Vol, veh/h	405	78	31	312	46	18
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	440	85	34	339	50	20

Major/Minor	Major1	Major2	Minor1	Minor2	Minor3
Conflicting Flow All	0	0	525	0	890
Stage 1	-	-	-	-	483
Stage 2	-	-	-	-	407
Critical Hdwy	-	-	4.12	-	6.42
Critical Hdwy Stg 1	-	-	-	-	5.42
Critical Hdwy Stg 2	-	-	-	-	5.42
Follow-up Hdwy	-	-	2.218	-	3.518
Pot Cap-1 Maneuver	-	-	1042	-	313
Stage 1	-	-	-	-	620
Stage 2	-	-	-	-	672
Platoon blocked, %	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1042	-	300
Mov Cap-2 Maneuver	-	-	-	-	300
Stage 1	-	-	-	-	620
Stage 2	-	-	-	-	645

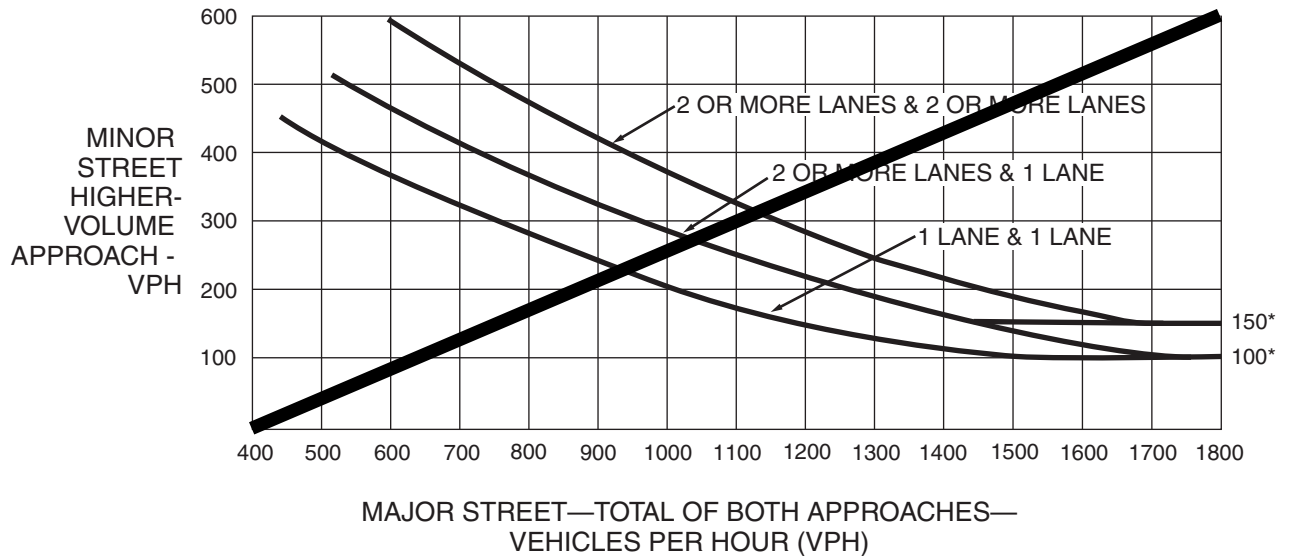
Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	17.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	348	-	-	1042	-
HCM Lane V/C Ratio	0.2	-	-	0.032	-
HCM Control Delay (s)	17.9	-	-	8.6	0
HCM Lane LOS	C	-	-	A	A
HCM 95th %tile Q(veh)	0.7	-	-	0.1	-

APPENDIX D

Warrant Analysis Forms

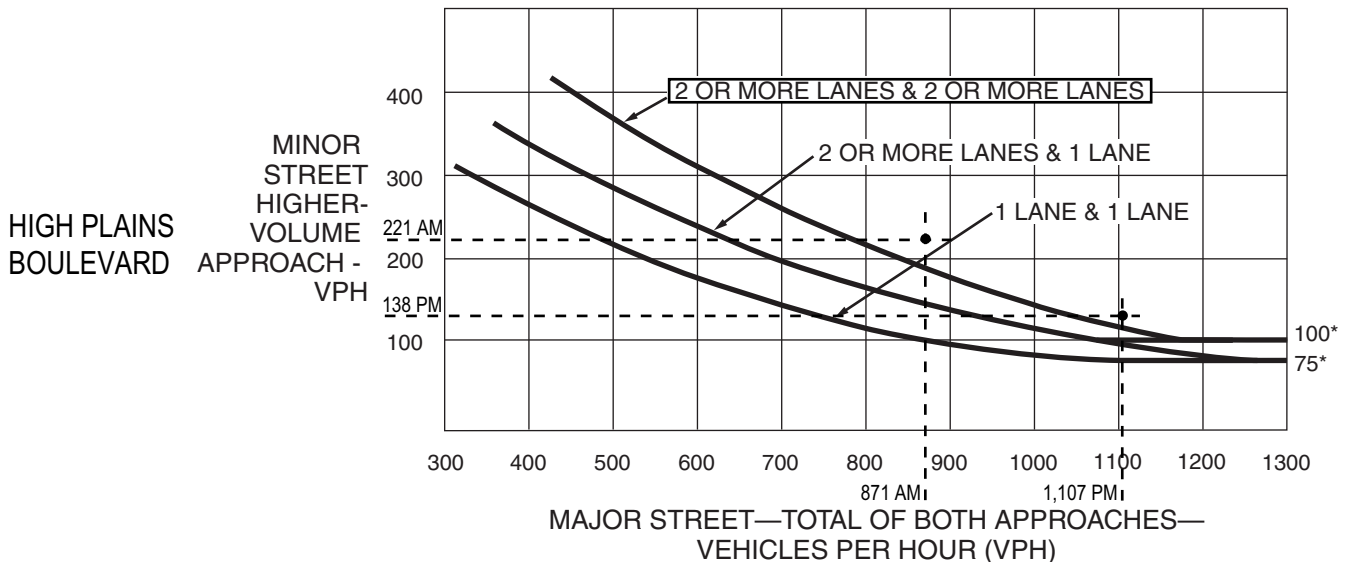
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

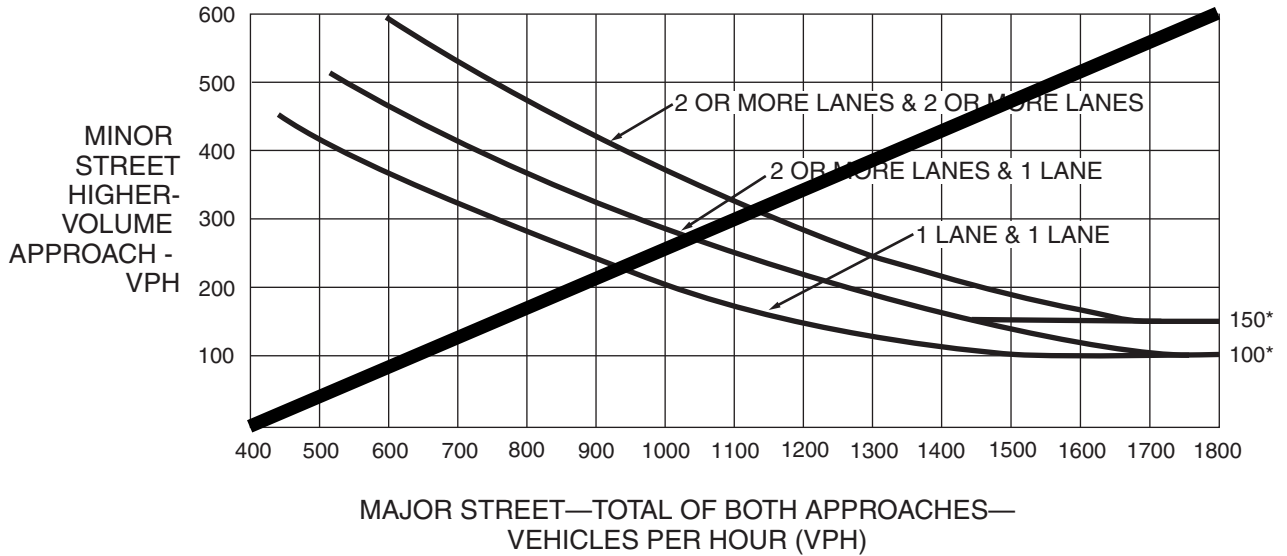
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

STATE HIGHWAY 60 (55 MPH)

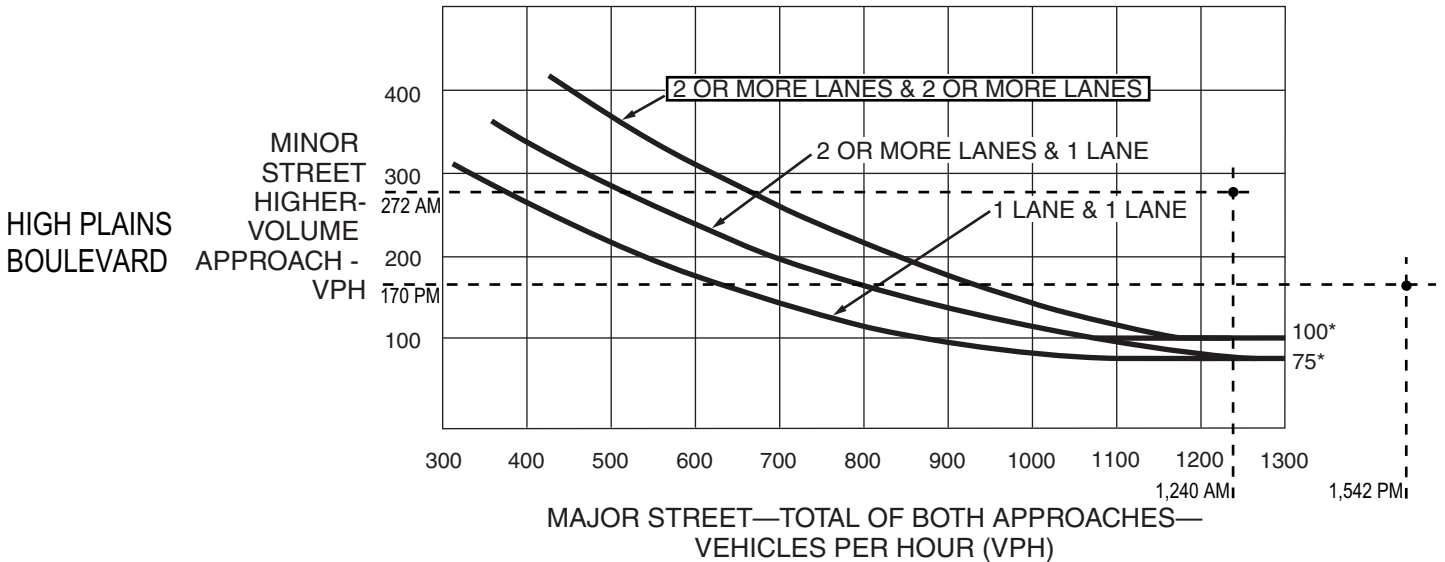
Figure 4C-3. Warrant 3, Peak Hour



*Note: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

STATE HIGHWAY 60 (55 MPH)